GUY'S HOSPITAL GAZETTE,
JANUARY, 1879.

CASE OF SULPHURIC ACID POISONING.

Elizabeth J., æt. 25, admitted into Clinical under Dr. Pavy, on January 6th, 1879.

Previous History—Patient enjoyed excellent health until 3 or 4 years ago, since which time she has suffered from attacks of Bronchitis at intervals. Menstruation regular to 3 months ago. Amenorrhœa since.

Present Illness.—During the last 3 months she has been taking some "quack" cough mixture, on account of a cold and cough. This mixture was kept in a small bottle in a box, where also was another bottle containing Sulphuric Acid, with which patient was in the habit of cleaning the scales, &c., of her shop. (her occupation is that of a green-grocer, she has used the Acid for that purpose for a considerable time). On Wednesday morning, January 1st, she went to take the cough mixture as usual, when, by accident, she took the bottle containing the Sulphuric Acid, poured out the prescribed dose ℥j, and drank about half of it, when she was seized with severe burning pain of the mouth, fauces, and larynx: the pain extended down left side of sternum for about 3 inches but did not reach the epigastrium. Almost immediately after taking the poison, she says she felt giddy and fell down; she vomited at once, the vomit consisting of a dark brownish fluid, with nearly a pint of dark coagulated blood. A medical man who was called in prescribed a thick whitish mixture, (probably chalk or magnesia) but patient was unable to swallow it; brandy and eggs were advised but she could not swallow anything. Her breathing was somewhat difficult and painful, and her voice low and hoarse. On the Thursday she remained in the same state, taking no nourishment. On Friday evening she vomited about ℥jj of clotted blood, and again on the following day. She passed no blood per anum. On Saturday eveding as she was still unable to swallow, and had taken nothing since the accident, an enema of Oss. of Beef-tea and ℥jj of brandy was given. A few hours after the enema had been given, her bowels were relieved, for the first time since taking the acid; the stools were dark but did not appear to contain any blood. On Sunday and Monday she again vomited a small quantity of blood: the enemata were continued twice daily, but still patient was weak and restless, and took little notice of what was going on around her. Her condition not improving, and the case being thought a hopeless one, by the medical men who attended her, she was advised to come into Guy's Hospital.

On admission.—Patient is fairly well nourished, has a pinched and anxious expression; pupils rather contracted; breathing laboured and deep, chiefly thoracic; short hacking cough with frothy mucoid sputa; the upper lip presents a small corroded patch at each extremity. T. 99°, P. 150 small weak and compressible.

Alimentary Canal.—Tongue moist, partially devoid of its epithelium, papillœ prominent; the back of hard palate, soft palate, and uvula, are much reddened and ulcerated, the ulcers presenting small white sloughs upon their surface; pharynx and larynx could not be examined on account of the pain patient experienced on opening her mouth; larynx is tender to external pressure, but not materially swollen; deglutition very painful, she cannot swallow even fluids: bowels confined, no distention of abdomen; no tenderness whatever on pressure over epigastrium.

Heart and Lungs.—Normal.

Urine.—Specific gravity 10°20, no albumen, passed without pain or difficulty.

January 7th.—Pupils normal; constant laryngeal cough with tenaceous glairly expectoration; very drowsy; lying on her back with chin flexed upon sternum, T. 99° P. 160. small and weak.

Ordered an enema of Egg j.
Brandy ℥ jj.
Beef-tea, ℥ vi. 4tis horis.

7 p.m., T. 99° P. 120 scarcely perceptible; R. 24. ordered a gargle of Tr. Opii and Pot. Permang.

9th.—Slept well during the night; feels very thirsty; throat less painful; has taken some milk without much pain, T. 100°3, P. 150 small, bnt stronger than yesterday, R. 32.

Ordered Enema fluid meat, ℥j.
Brandy, ℥j.
Dec. Amyli ℥iv. 4tis horis.

7 p.m. lying quite comfortably, has taken a considerable quantity of milk during the day, says she feels much better, Evening T. 100°6, P. 140.

9th.—She had very little sleep during the night, suffered from intense thirst. At 7 30 this morning she vomited a brownish yellow mass, which on examination appeared to be a complete cast or slough of mucous membrane of Œsophagus and part of stomach. The cast was from 12 to 15 inches long, and corresponded in shape to the Œsophagus and stomach; the upper part being long and narrow, the lower much wider but shorter, 4 by 4 inches. On careful inspection of the wider portion, numerous polygonal depressions were observed, doubtless these corresponded to the Alveoli of the stomach. The upper portion of the cast presented at its centre an opening about the size of horse-bean, while at various parts were striaæ, resembling the longitudinal fibres of the Œsophagus. Soon after vomiting the slough patient brought up a quantity of blood and mucus, and as she continued to do so for some time, ice was given her to suck, which restrained the hæmorrhage.

11 a.m. Extremities cold, face pale; tenderness to pressure over epigastrium; throat much more painful continually hacking up sanguineous mucus with pieces of mucous membrane, T. 100°9, P. 128, very feeble.

Prescribed brandy and ice.

℞ Tr. Opii ♏v.
Muc. Acac. ℥j. every hour.

2 p.m. T. 100°5, P. 136.

9 p.m. T. 100°3, P. 118, R. 42, intense thirst; bowels open, abdominal pareties rather rigid, no distension of abdomen.

10th.—Passed a good night; had slight cramping pain in legs; throat and fauces much improved; the sloughs have disappeared, leaving a healthy granulating surface; deglutition less painful, has taken milk several times during the night; thirst still very great no dysuria, T. 100°, P. 112, improved in volume, epigastric tenderness.

11th.—Countenance less anxious; feels better; no tenderness over stomach to day, T. 102°; P. 118, Evening T. 99°, P. 116.

12th.—T. 98°9.

13th.—Patient looks considerably better; deglutition scarcely at all painful; cough still very distressing, and thirst great; T. 100°8, P. 124, moderately strong, Evening T. 100°1, P. 112.

Beef-tea and bread soaked in her milk ordered.

14th.—Going on favourably; moist râles over chest; voice has slightly improved; can now swallow fluids with very little pain; enemata to be discontinued, T. 100°2, P. 112.

16th—Cough was very troublesome throughout the night; physical signs at right apex; a few moist râles with prolonged exp. murmur; no dulness; left apex, breathing normal; posteriorly, numerous moist râles over both lungs, especially right; T. 98°5, P. 100. Ordered 2 eggs.

20th.—Patient begins to be quite lively, she is sitting up in bed knitting; she has no pain whatever in swallowing, except when she swallows too much at a time. I examined her throat with the laryngoscope this morning, but could not see much as she could not bear the operation. The epiglottis appeared to be much contracted, also much injected and red.

24th.—Going on very well.

27th.—She has been allowed to get up and walk about the ward for the past three or four days; she is rapidly recovering her strength. She has not taken any solid food yet, but can take liquids without any inconvenience. No tenderness or soreness of throat. Chest symptoms still remain. There appears to be some impairment of the normal percussion resonance at right apex, with occasional moist râles and jerky respiration; sweats sometimes at night, but no other symptom of phthisis.

Remarks.—An interesting feature of this case is, that patient never complained of any epigastric pain or tenderness after taking the poison until she vomited the cast, and then the tenderness to pressure was never very marked. Usually, the victims of mineral acid poisoning complain of intense burning pain from œsophagus to stomach, this being frequently followed by distension of abdomen, cramping pain in limbs, dysuria, &c. Our patient never had any dysuria, and suffered from slight cramps in her legs only one night. Thirst was a prominent symptom throughout.

As to prognosis in cases of poisoning by sulphuric acid, this depends upon the quantity taken, and whether it is taken upon an empty stomach. If taken upon an empty stomach, death may be caused by perforation within twenty-four hours. Injury to the air passages, causing asphyxia, is also a frequent cause of death in these cases.

Should the patient recover from the immediate effects of the poison (as our patient has done), she may suffer from the distressing after effects, especially stricture of œsophagus, some months or years after. Many patients recover only to be valetudinarians for the remainder of their lives.

H. ELLISTON WRIGHT.

CASE OF FRACTURED TIBIA AND FIBULA.

FATTY EMBOLISM.—DEATH.

R. M., æt. 52, was admitted into Charity on Sunday, October 6th, with fracture of lower end of tibia, and of fibula two or three inches higher up. Her manner was strange and excitable.

October 7th.—Refused to take any food. Towards evening became violent. Ordered Morph. inject gr. ¼.

October 8th.—Remained about the same during the day. Injection repeated during the evening. Was quiet during the night, but at 7·30 on Wednesday morning died suddenly.

Post-mortem.—The fractured ends of bone were separated by a thin bloody fluid, in which floated globules of fat. All the viscera, except the lungs, were healthy.

The following account of the condition of the lungs was made by Mr. G. F. Crooke:—

Small pieces of the lung were taken and hardened, first in a weak solution of chromic acid (one-sixth per cent.), and also in a one-fourth per cent. solution of Bichromate of Ammonia. In these solutions they were kept about three weeks, and afterwards were transferred to Rectified Spirit—which I generally prefer to Methylated for the completion of the hardening process. In order to prepare the tissue for section cutting, by means of the (Williams) freezing microtome, the following method—the one generally applicable—was followed:—Small thin pieces, about the diameter of a threepenny piece, but twice as thick, were soaked for the night, first in water, which removes the super-

fluous chromic acid and alcohol that would be detrimental to the freezing process; then the pieces were tranferred for some hours to a solution of gum of moderate consistency, after which they were ready for the microtome. The sections as they were cut were transferred to distilled water, where they remained for an hour or two in order to allow the escape of the numerous air bubbles contained in them.

Lastly, in order to shew the pressure of fat embolism, the sections were kept in a half per cent. solution of osmic acid for 24 hours in a dark place, the rationale of this method consisting in the fact that osmic acid has the peculiar property of blackening the most minute globules of oil wherever they exist.

Sections were now mounted on Farrant's mounting fluid and examined under the microscope.

Under a low power (30 diameters) no evidence of fat emboli in the pulmonary arteries could apparently be fonnd, but on careful examination with higher powers black globules were found in several of the medium sized and smaller vessels; and in those cut across obliquely, just where the lumen narrowed and where a collateral branch came off, blackened oil globules, breaking up into irregular masses, were seen. Also in several place short, but serpentine-like black plugs were seen in the alveolor walls, showing plugging of the pulmonary capilloneson. In all, the blood vessels were closely packed, red and white blood cells imbedded in a basis of finely granular substance which was no doubted preaputed from the liquor sanguine by the chronic compound in which the tissue was prepared. There was also a general caterrhal change in the alveolar epithetum (epithehal proliperation).

From the above appearances it will appear to many that the evidences of fat embolism were insignificant, and indeed the same view occurred to myself, especially on contrasting th section with onee from a case of fat embolism that occurred in Edinburgh, one particulars of which were related in a paper before the last meeting of the British Medical Association by my able teacher, Dr. D. J. Hamilton, Demonstrator of Practical Pathology in the University of Edinburgh. But it is possible that the piece of lung from which the sections were made was not so involved in the embolic process, and the fact still remains that the blackened plugs of oil above described, and certainly not found in normal lung treated with osmic acid, and not, as far as I am aware, in any other of the numerous lesions to which that organ is liable. The black masses too are early distinguish from the ordinary black pigment found in the lung, the latter being granular in appearance, very irregular in outline, corresponding to the lymphatic spaces in which they are contained around the artenas and bronchulas, the former are distinguished by their even rounded outline, and besides by their position in the lumed of the arteries. It is intended to carefully examine all the other pieces, the results of which will be made known in a future number.

RUPTURE OF THE BICEPS HUMERIS MUSCLES.

An interesting case of the above came under notice in the Surgery a short time since.

Eighteen months previous to the present accident the patient, a man aged 54 years, when lifting a heavy weight felt something give way in the right shoulder. He lost power in his arms, and at the same time noticed a lump about the middle of the humerus. He was, however, able to work again in about the weeks' time, but never regained the former strength of his arm. One evening, whilst raising a heavy weight from the ground, he experienced a sense of tearing in the left shoulder, and noticed that there was a lump in the middle of his left arm; he bound it up and the next day came to the Hospital.

When seen the biceps muscle was very prominent at the lower part, and above there was a depression. In this depression the tenderest parts of the biceps could be easily made out, more especially the short head as it passed along the bicipital groove.

The prominence became more marked when the arm was flexed. There was no discoloration of the skin nor bruising, nor did the man complain of pain. The right arm was in a much similar condition.

KRISHABER ON SYPHILITIC AFFECTIONS OF THE LARYNX.

In the first past of a contribution to the study of respiratory troubles in syphilitic disease of the larynx (*Annales des Maladies de l'Oreille, du Larynx, et des Organes connexes*, September, 1878), M. Krishaber begins by alluding to the period of the disease at which laryngeal affections appear, and is of opinion that it is impossible to assign a limit to the time at which they may develop. According to an analysis of cases made by himself and Mauriac at the Hôpital Midi, the earlier syphilitic eruptions of the larynx appeared from two to six months after the primary sore. Only once was the interval so great as ten months. The later affections are frequently met with after an interval of perfect health, long after infection, generally about four or five years, but also ten or fifteen, and even much later than this. Sometimes, many years after infection a simple erythema occurs, whose specific character is only revealed by the subsequent appearance of grave symptoms. What seems to be a simple laryngeal catarrh, some time after contamination, may give rise to œdema endangering life; and it is most important to remember that œdema may complicate all forms of syphilitic laryngeal trouble in a syphilitic subject, though only seeming to be due to a cold, should be treated as of grave import.

Syphilitic vegetations form most frequently without œdema. They grow very slowly, and attack, in order of

frequency, the true vocal chords, the false vocal chords, the subglottic mucous membrane, and lastly, any other part of the laryngo-tracheal cavity. The lesions consist of a kind of membraneous prolaspe at the level of the vocal chords, arising sometimes from one or other surface, and forming a sort of diaphragm which tends finally to bring about complete obstruction. Sometimes true polypoid vegetations occur. It is easy to distinguish syphilitic from simple polypi, as the latter form in a healthy organ, whereas the former are only consecutive to previous lesions, generally ulcerative. There is no clear local sign of distinction between syphilitic and cancerous or tuberculous growths; the diagnosis must be made from other facts connected with the case.

Another form of syphilitic marrowing is caused by the cicatricial contraction of the tissues after loss of substance from deep and extensive ulceration; but when the mucous membrane only is affected, it recovers wonderfully under specific treatment, and it is sometimes scarcely possible to find any trace of the lesion afterwards. Although the acute stenoses are promptly influenced by treatment, the author has never seen the chronic form regress under any kind of medication.

The chronic stenoses are divided into three classes, as follows.

1. Where the glottis is obliterated, and respiration is carried on through the tracheal canula; voice abolished.

2. *Inspiratory stenosis.* Patients are unable to inspire sufficient air, but can expire enough to cause sonorous vibration of the vocal cords, if these be not too much implicated; hence there is some degree of voice. Such patients also require tracheotomy.

3. *Incomplete laryngo-stenosis.* Tracheotomy has been avoided, The lesion is arrested, but no improvement occurs. These patients breathe sufficiently to live, if kept quiet, and no complication arise. They may enjoy fair health. The voice is more or less normal.

In these cases wheezing or whistling breathing (*bruit de cornage*) is not in direct relation to the intensity of the lesion.

The *prognosis* of syphilitic laryngo-stenoses is arrived at especially by noticing the evolution of respiratory symptoms. If these come on slowly, they constantly indicate insidious organic disease leading to a serious result. If, on the contrary, disorders of respiration occur rapidly, they indicate a state of imminent danger; but one capable of being promptly relieved by energetic treatment. Syphilitic lesions are generally more grave in the trachea than in the larynx, and laryngeal lesions are of more serious import in the subglottic portion than when situated above the vocal cords. Œdema appears to happen most frequently after a chill. Krishaber thinks it well to consider most cases of œdema in non-tuberculous persons as being syphilitic, whether cold be or be not assigned as the cause; and calls attention to the fact that œdema of the larynx is rare apart from any diathesis, whilst in diathetic affections it is the reverse. Therefore, bearing in mind the possibility of relieving syphilitic œdema by general treatment, and without any operation, it is rational to admit the presumption of syphilis, and to act accordingly, although the diagnosis be uncertain.—*Medical Record.*

ON GALVANO-PUNCTURE FOR AORTIC ANEURISM.

Ciniselli appears to have been the first to employ galvano-puncture in aortic aneurism. This was in 1856, and since then the operation has been adopted by many others. Dugardin Beaumetz has given an account of twenty-one cases which were treated in Italy, by the original method, between 1856 and 1870, but the results do not appear very encouraging, two cases only remaining well nine months afterwards, one four months after, and the others succumbing either to secondary hæmorrhage, gangrene, or in the ordinary course of the disease, at varying times after the operation.

This want of success, perhaps, prevented the treatment becoming more general, physicians being loth to recommend a procedure which, at the best, gave no better result than the already existing methods, whilst in the event of failure it was not unattended by immediate risk.

Recent observations tend to show that the result depends to some extent on the *modus operandi*, and although Ciniselli's method is still adopted by some, a modification of it—said to be due to Tripier—is more generally employed.

When a continuous current is passed through a fluid-like blood serum, the salts held in solution are decomposed, the bases, being electro-positive, go to the negative, and the electro-negative acids are set free at the positive pole. At the same time there is a liberation of gas, which theoretically should be twice as voluminous at the negative pole (hydrogen) as at the positive (oxygen), but experiment on animals, and on blood in voltameter, shows that under these circumstances the liberation of gas takes place, mainly at the negative pole; the oxygen set free probably entering into combination partly with the blood-cell contents, partly oxydising the metal, and a small quantity forming peroxide of hydrogen, as in ordinary electrolysis of acidulated water.

The method recommended by Ciniselli, and used by him until his death, is as follows:—From four to six needles are implanted in the aneurism through the thoracic wall. The positive pole of a pile decomposing 2 cc. of acidulated water (1-30th H^2SO4) for five minutes, is then connected with one of the needles, the negative being represented by an electrode placed on the chest wall. At the expiration of five minutes the current is stopped, and the first needle is joined to the negative pole, the positive being passed on to the second needle. From this stage of the operation until its completion both

currents are passed through the needles, each of which becomes successively positive and negative for the space of five minutes.

The new mode consists in connecting each needle in turn with the positive pole, the negative remaining outside the aneurism all the time, and communicating with an electrode covered with moist wash-leather, which is placed on the skin.

It is stated that the danger of gaseous embolism is thus minimised, pain avoided, and the risk of secondary hæmorrhage from the caustic action of the negative pole (when the base is liberated) done away with. The coagulating power of the current is not, however, diminished, experiment having shown that the clot forms almost entirely at the positive needle.

Cases treated by this process have recently been published in France by Ball, Bernutz, Beaumetz, and Proust, and Dr. Dreschfield, of Manchester, has given his experience of the method in the *Revue Mensuelle* of last August.

The following account of an operation, at which the writer was present, will be no doubt interesting to the readers of the *Gazette*:—The patient is a bootmaker, aged 45, and has suffered from hæmoptysis for three years. There is slight double exophthalmos. The superficial veins on the upper part of the thorax, and especially on the right side, are much swollen. There is pain in the right chest. The thorax bulges in front and on the right side, where there are two pulsating centres. There is dulness from the median line seven centimetres along the second, eleven along the third, and ten along the fourth ribs. Heart's sounds feeble. Diastolic souffle. The patient was galvano-punctured on the 28th of February last.

Operation (19th March). — Three needles were introduced into the aneurism, some difficulty being experienced in pushing them through the skin, which in one instance was remedied by a preliminary nick with a bistoury. The patient complained much of pain, and seemed very anxious. The positive pole, being connected with one of the needles, the current was allowed to pass for five minutes. It was then moved to the second for a similar length of time, at the expiration of which it was passed through the third. At one time strong contractions of the pectoral muscles were observed, and the patient complained greatly of pain, and seemed apprehensive; but the cause being found in the non-adaptation of the end of the conducting wire with the needle, which gave rise to interruptions of the current. It was at once remedied.

On the removal of the wire from the third needle it was re-applied to the first, and the current again passed successively through each for five minutes. This was in all thirty minutes, and the negative pole (a metallic plate covered with wash-leather) was placed all the time on the thigh. A few days after there was great improvement, diminution of impulse, less souffle, decrease in size of the veins, and little or no oppression. Before the operation there had been vomiting (from pressure of tumour on the œsophagus), but this was much improved. Appetite and sleep were good.

It is regretable that this case could not be brought to a definite issue. The operation had been most beneficial, and some time after it was resolved to repeat it, but on the arrival of the operator the patient had made himself conspicuous by his absence, and when at length discovered, obstinately refused to consent to the treatment. He was accordingly discharged from the hospital (St. Antoine), and having returned to his native land—Germany—is temporarily lost sight of.

Dr. Dreschfield has tried every method of galvano-puncture. The passage of the negative current alone, of the positive alone, and of both simultaneously; and although one of the cases in which the negative current was used gave a satisfactory result, he now prefers the method which was followed in the case described above.

In the *Lancet* for November 30th Dr. Carter gives details of a case which show the necessity of great caution. Ciniselli's operation was performed and produced pain, the formation of gas, and hæmorrhage on withdrawal of the negative needle, which are all avoided in positive mono-puncture. All operators are agreed that the needles should be fine, but a difference of opinion exists as to the advisability of isolating them by a coat of varnish. Some think the naked iron may produce gangrene, whilst others assert that it only sets up adhesive inflammation at the seat of puncture, which tends to prevent subsequent hæmorrhage. The strength of the current has already been noticed, and it is always advisable to measure it beforehand, as inflammation and suppuration of the sac may occur when it is too strong. (See a case in *British Medical Journal*, by Dr. Simpson, July, 1877). According to Dixon Mann the clot produced by a feeble current is quite as firm as that resulting from the passage of a strong one, only it takes longer to form.

The dangers of galvano-puncture have already been mentioned, and although it would seem reasonable to anticipate the clot being detached and carried into the brain, experience seems to show that the fear is unfounded. "It never happened to me," says Dr. Dreshfield, "to observe a detached clot produce an embolism in one of the cerebral arteries, and I know of no such cases."

With the exception of Professor Ball's patient, whose fate is unknown, all the others treated in Paris have since succumbed, their aneurisms being found on post-mortem examination. Cured, *nil*. Galvano-puncture is as yet only on its trial, and in spite of the immediate relief given by the operation, it is doubtful whether it is ultimately beneficial. For a worker, who must toil or die, the risk is perhaps worth running; but in those cases where the patient can rest absolutely, the combination of posture, diet, and Potassic Iodide may possibly be found quite as expedient.

OSCAR JENNINGS, M.D.

One of the most constant topics of conversation last month was the formation of the Reading Room. The new year has seen our new venture fairly started, with every prospect of its being a great success. That it fulfils a want long felt by the students is well shown by the readiness of the men to become members. One hardly recognises now the old Surgery Class Room, opposite the Library, its place being taken by a clean, bright, and neatly furnished room, with its writing and reading tables. Great credit is due to the energetic way in which the Committee and its Secretary have worked to place the rooms on a good and lasting basis. The conveniences of the Reading Room only want to be fully known to be appreciated. We need hardly say it has our best wishes for its success.

GUY'S HOSPITAL GAZETTE,
JANUARY, 1879.

THE Reading Room is now fairly open, and we are happy to be able to state that it has met with good support, both from the staff and from the students. Many of the leading men in the staff, after enquiring carefully into its constitution, have come forward with subscriptions liberally, and the promoters of the scheme have now the satisfaction of seeing a good room, comfortably furnished, fulfilling the useful purpose they intended. We have looked in often lately, and were struck by the cosy appearance of the room, with its cheerful fire, its solid useful furniture, and the business-like group of men, some reading, others writing. We believe that perfect order is kept, and that men generally have expressed great satisfaction at all the arangements.

Objections, of course, have been started, and by some whose opinion is worth having, but they have all more or less tended in the direction of men wasting their time by lounging over papers and periodicals, instead of grinding bones and models in the Museum. These objections were met by showing that the room was not meant for men to spend their whole day in, and that they were not likely to do so, but they can be best met by the men themselves, who, we trust, will show that they can give Ellis his due time without neglecting Huxley and Gladstone. Chiefly through dread of examinations the medical student of the present day is in danger of becoming a specialist, for as soon as he comes up to Hospital, the fear and dread of his two "Colleges" steal away his peace of mind, and he is "afraid" to use his intellect in any direction, save that of examination; this accounts, to a certain extent, for the general opinion that medical men are narrow minded. At the very time when a man's mind is developing most rapidly, the "unhealthy strain of the present system of examination is brought to bear on him most rapidly with the result, in most instances, of a stunted one sided growth," as Mr. Gladstone so well put it in his address at the London Hospital a few year's ago. We see in the Reading Room the thin edge of the wedge which is to educate men for the world as well as for the bedside. Some day, and not very far off we hope, we shall see a Literary and Debating Society established in connection with the Reading Room, a Society that shall not interfere with the present honourable Physical Society, but rather work with it to draw men a little out of the deep slough of professional work. The University long ago recognized the want of such a healthy stimulus, and though opposed on exactly the same grounds that our room has been objected to, the much appreciated usefulness of the two "Unions" is generally acknowledged. We seem to forget that between three and four hundred men are in our midst, and among such a number there must be plenty of good material which only wants developing.

We hope that the Guy's Reading Room will lead to some such result as we have sketched out above, and while it shows the first effects of a vigorous life we wish the Committe, with its energetic Secretary, every success.

THE PHYSICAL SOCIETY.

MR. T. MORRISON IN THE CHAIR.

Saturday, November 30th.

Mr. Downes read Mr. J. J. Reynold's Paper on "Asiatic Cholera Epidemics, &c.," of which the following is an abstract:—

The writer, after a short description of two outbreaks which had occurred in his native town, enumerated some of the eccentricities of cholera epidemics, and then passed on to the consideration of the "specific poison" of the disease.

He thinks the cholera contagion consists of living organisms, which have the power of multiplication, both within and outside the body; but these organisms he believes only manifest their vitality when placed under certain favourable conditions, when they rapidly increase both in number and aggressive power.

If these certain conditions are wanting, the cholera germ either at once dies or assumes a dormant vitality. In this latter case, after a certain time it dies if the conditions are still absent.

It can only be derived from a person suffering from cholera, and chiefly, if not solely, through the discharges from the alimentary canal, and it is received into the human body either by the (I.) air (we

breathe), (II.) water or milk (we drink), (III.) food (we eat), or (IV.) personal contact.

The probabilities are the air cannot convey the "poison" to any great distance, but that when it travels from one country to another it is conveyed by human intercourse; over small areas, as from one part of a town to another, it may be diffused, probably by the movements of the atmosphere. The conditions which give energy to the spread of cholera may be classed as—(A.) Meteorological; (B.) Local.

METEOROLOGICAL.—The atmosphere most favourable for cholera is a moist, warm, and stagnant one. Heavy rains check the spread of the disease, while on the contrary slight falls have just the opposite effect.

LOCAL AUXILIARIES.—I. Unhealthy sanitary conditions; II. Impure water; III. Low level of soil.

Dr. Tarr has shown that the elevation is very important indeed; the mortality of cholera being in the inverse ratio of the elevation.

In reference to the periods of incubation he thinks that in some cases it does not exceed four hours, and gives a case to support this statement. Niemeyer fixes the period of incubation at not less than thirty-six hours or more than three days.

There are two great theories as to the cause of the collapse stage. The first is, that it is due to the blood being robbed of its liquid constituents by the repeated discharges from the bowels, whereby it becomes thick like tar, and is unable to flow freely. The second theory is that it is not due to these excessive discharges, but that they do good by eliminating the "poison," which causes the collapse, as Dr. Johnson thinks, by producing spasm of the muscular fibres of the minute pulmonary arteries, and thus barring these slender channels against the advancing blood; and therefore he thinks the thickening of the blood is a consequence, and not a cause of the arrested circulation.

Mr. Reynolds, for reasons stated, disagrees with both these theories, and thinks the "cholera poison" acts in three ways—as a purgative, cardiac sedative, and emetic; but these actions, he believes, are influenced by certain conditions, such as the constitution of the person, &c.

In those rapidly fatal cases, where little or no purging takes place, he attributes to the "poison" acting chiefly on the heart.

Treatment.—During the period of diarrhœa opium should be given in large doses, and when vomiting with "rice-water" purging sets in, it must on no account be continued.

It is very important that the treatment should be commenced early, and of course the patient should should take to his bed at once.

During the collapse stage he lays great stress on giving abundance of water to the patient, and thinks during this stage the great thing is to try and thin the blood.

In severe cases he thinks injections of liquids into the veins or bleeding might be beneficial. If the diarrhœa continues during this stage some astringent must be given.

Stimulants, as a rule, are useless.

After mentioning Dr. Johnson's treatment the paper ended on how to prevent the appearance of cholera, and to arrest its progress when it has appeared.

CHRISTMAS AT GUY'S, 1878.

It was a matter of general observation that we were having a "real Christmas" this time, and as far as cold and plenty of snow go, this was literally true. The outer world, the great outer world we will call it, then boasted of its good old Christmas time Our own little world of Guy's also had its Christmas, and never do we recollect a more pleasant and cheerful time. It was generally remarked by the senior residents this year how comparatively little acute disease there was in the wards, notwithstanding the severe weather. Consequently the work of decorating the wards was carried out under favourable circumstances with very good results. We particularly wish to notice that the heavy style of decoration was this year happily absent, the heavy festoons and great awkward branches of evergreens gave way, with very few exceptions, to a lighter and more artistic style. Sisters and nurses are gradually learning that a small bunch artistically placed, is more economical than a large mass clumsily put together and stuck up anyhow. Our Medical wards on account of their size, certainly bear the "heavy style" better, but this year we wish to notice the general improvement in this department. The Surgical wards however were well to the front this time, and prominent among them, as usual, was Cornelius with its pretty doorway, and handsome arrangement of red letters on white ground, some wonderful trellis work, and a very inviting tower over the sister's room also attracted our notice. Immense labour must have been expended in Luke, for festoons, which were well made we thought, extended right round the whole ward, Mr. Bull's cartoons were conspicuous by their absence, but some of last year's particular *morceaux* were again displayed to advantage. Charity was very loyal to its Surgeon's and Dressers, and also gloried in a handsome Christmas tree, hung and decorated by kind hands not altogether unknown in our wards.

Lydia and Dorcas also had Christmas trees, the former also bearing testimony to the taste and goodwill of the same kind lady.

The other male Surgical wards were not so extensively decorated on the whole. In Lazarus we noticed very pretty wreaths round the numbers over the beds on the walls. Naaman was taking in on Christmas Day, so the decorations were not finished

till some days later. In this ward the numbers on the walls were wreathed with real white moss, in a way which makes criticism superfluous, the beauty of this natural method of decoration was only equalled by the originality of the designs; we noticed the Surgeon's monograms in beetles' wings over the fireplace, and an original and handsome design, a harp and two cornucopia in green, on the left hand side near the door; we missed the lovely floral decorations of last year in this ward.

The Eye wards were not behind hand, and they showed that willing hands had been at work, willing hearts also we may say, if we are to judge by the wishes so freely displayed, for the prosperity and success of the distinguished surgeons in this department, *floreant!*

Martha, though found like a lost sheep among the Medical wards, installed *pro. tem.* in Astley Cooper, was by no means a black sheep, it compared favourably with the other Surgical wards, and its gorgeous Christmas tree was excelled by none, in fact, in number and variety of toys it ran away from all the rest. Philip was overflowing with good wishes to everybody, which shows a very contented frame of mind. A handsome shield with the Guy's Arms, over the mantlepiece in the Hall attracted our special attention, Bright had evidently had much care lavished on it, and was a vast improvement on last year, we noticed some very beautiful texts, most effectively wreathed, and the green decorations on the whole were very good.

The decorations in Stephen were centred in its Hall, which looked remarkably pretty. A large white sheet was stretched right across over the mantle-piece, and across this was a "Happy Christmas" in exquisite straw letters on a red back-ground, this formed the scroll of an immense shield, which was formed by wreaths hung from the ends of the motto, the whole being most effective. The small windows in the hall also were covered with trellis work, which served well to keep up the general effect; in the two divisions the arches over the fireplaces were wreathed in quite an original way, and the gaseliers being also covered with green, looked very well. Mary was simply but neatly decorated as usual.

Clinical again boasted some of its last year's decorations, the beautiful shields so much admired then were again to be seen on each pillar, and also some of the texts in rice letters, these wards did not look so well as last year but they had a very bright and pleasing aspect. So much for the decorations.

The greatest pleasure however was derived from seeing the way in which so many sick people managed to enjoy themselves, it was especially pleasing to see how many were able to be up. The plum-puddings were excellent, and the dessert as usual, was most cheerfully subscribed for by the students of the hospital. The residents, according to annual custom, visited all the wards in a body, and fun and frolic being the order of the day, tried to amuse the patients by singing glees, &c., and to judge by their subsequent remarks, the patients enjoyed the fun. The men formed convivial groups among themselves, and seemed to enjoy most keenly the luxury of a pipe the privilege of smoking in the wards being only granted on Christmas day. By 10 p.m. the wards were in perfect order for the night as if nothing had happened during the day, and next morning the House Physicians and House Surgeon were, we are happy to say, unable to report any mishap worth mentioning, and had the extra assistant at the Dispensary, which some people might have thought necessary, been engaged, he would have found his time hang heavily on his hands, the demand for pills we believe, being scarcely up to the average. Thus ended a right merry Christmas, and though disease stalks in our midst, and suffering and misery are but too familiar, yet in sympathy with the great world outside our English hearts responded to the stimulus of a season that brings "Good will to man."

THE ABUSE OF MORPHIA.

II.—SYMPTOMS REFERABLE TO THE SUDDEN DISPENSATION OF MORPHIA.

(*Continued from page* 131.)

The symptoms referable to a sudden and total abstinence from morphia when the system has become tolerant of the drug, are much more severe and constant in their severity than any that can follow the use of the narcotic. Nor does the severity of these symptoms bear much relation to the extent to which the drug has been abused; patients who have long taken from twenty to thirty grains daily do not seem to suffer more acutely, although their punishment may be more protracted than others who have not exceeded a fourth of that quantity.

Now and then one meets with persons who can conquer their craving for morphia by the simple exercise of a strong will, but few have sufficient fortitude voluntarily to endure a punishment which they can at any moment exchange for ease or pleasure. Most patients find it necessary for their cure to undergo a course of medical treatment with entire surrender of their personal liberty to medical authority.

Very soon after the period of abstinence has commenced the patient begins to experience a sensation of vague but intense discomfort. He becomes extremely restless—not despondent, as Dr. Levinstein has asserted, for his spirits are rather raised than otherwise.* His restlessness is aggravated by paroxysms of incontrollable yawning or sometimes sneezing, he becomes bathed in perspiration, his lachryonal and salivary glands also secrete abundantly; later on he may have dyspepsia with flushing, and more or less irregular action of the heart. The digestive organs show much disturbance. Levinstein asserts that morphia, even when used hypodermi-

* In this respect, namely, that the patients find their spirits somewhat improved at the beginning of their treatment. Abstinence from opium resembles that from morphia. The other symptom experienced by the two classes of patients differ widely. Compare the weird narrative of the "English Opium Eater" with the clinical r ports published by Dr. Levinstein.

cally, always causes chronic inflammation of the whole tract, but this is probably an error. There is always considerable diarrhœa, with sometimes griping pain in the intestines—probably due to increased peristaltic action—and nausea or vomiting. The appetite, which at first is very bad, rapidly improves.

The cerebro-spinal system is also severely affected. Neuralgic pains appear in various parts of the body, but much worse than these is the peculiar and quite indescribable sense of discomfort, sometimes as if the body had no weight, or the head were large enough to fill the room. The insomnia is very obstinate, and if it cannot be controlled the nervous symptoms become extremely distressing. The patient has hallucinations and delusions, and from being noisy and excited he may pass into a condition of frenzy, perhaps resembling the delirium tremens of alcoholism, or the mania of hydrophobia. Such cases must, of course, be carefully watched, and treated in such manner as to eliminate every possibility of suicide.

Subsequently to the stage of excitement or, perhaps, taking its place, there may supervene symptoms of collapse of a character so alarming as to require the most prompt and energetic treatment. This condition is sometimes simulated, especially by hysterical women patients when they find their entreaties for morphia of no avail; but they cannot, of course, simulate the worst symptoms. The pulse sinks to a very low rate—from twenty-five to thirty—and becomes hard and small, the face pale and cold, the features pinched, and the respiration slow, and most likely sterterous or sighing. The chief danger to fear seems to be failure of the heart's action. Fortunately this condition is easily controllable by the injection of half a grain of morphia, to be repeated if necessary in half an hour or so. Other stimulants may be exhibited with advantage, as ether, brandy, wine, and strong coffee; and external stimuli as smelling-salts, and blisters may be useful. (Dr. Nussbaum strongly recommends the *subcutaneous injection of atropine*—from gr. $\frac{1}{100}$ to gr. $\frac{1}{50}$—*for* collapse from any cause whatsoever.)

The impotence which sometimes occurs from the abuse of morphia disappears without special treatment soon after the drug is withdrawn. The return of sexual power is characterised by some re-action in the form of sexual excitement and seminal emissions. An unstimulating diet and the vegetable tonics will be found sufficient treatment. In women the menstrual functions are also ordinarily suspended, and restored upon abstinence from the drug.

The following is a paragraph from the clinical report of a case in the "Maison de Santé" at Berlin:—"Mrs. B. D., æt. 32, wife of a physician, eight years ago, during her first pregnancy, she was treated for sickness and face-ache with morphia injections. She miscarried in the sixth month of pregnancy. Since that time patient has suffered from craving for morphia, using on the average eight grains a day. She has had uninterrupted pregnancies—six, four, and two years ago. The three children are living. . . . . During the last summer patient suffered from fibris intermittens quotidiana. For one and a half years the menstrual discharge has stopped. The other symptoms were loss of appetite—patient living only on milk and raw eggs—constipation, and insomnia." The treatment began on September 18th, patient left the institution in perfect health about the end of Octobea.

In the amenorrhœa of these patients the menstrual function is never fulfilled vicariously. It may commence with dysmenorrhœa or suddenly, and is supposed to be due to the chronic poisoning preventing ovulation, and destroying the sexual appetite. It is curious that obstinate leucorrhœa will sometimes disappear as soon at the patient begins the habitual use of morphia.

Chronic morphia poisoning has none of the destructive powers attributed to chronic alcoholism; and, however the drug may have been abused, is not likely to set up any pathological change in the viscera. It may, however, and frequently does, give rise to some albuminuria, an affection which is far more frequently met with, and to a greater extent during the period of abstinence, although the kindeys remain structuraly healthy; and Levinstein has shown by direct experiment that animals treated with morphia during any length of time constantly get albumen in their urine, which disappears on the drug being withheld. Moreover, the patients admitted to the Maison de Santé at Berlin nearly all had more or less albuminuria during their treatment with no other ascertainable cause. No special treatment is required; if the morphia be perseveringly abstained from, the urine will soon be found free from albumen.

One of the most distressing and intractable symptoms during the cure is isomnia with much restlessness. It will generally persist, whatever course of treatment be adopted, during the first three or four nights, and then gradually go away as the nervous system re-assumes its normal tone. Chloral is of little use as a remedy for this condition, and is not well borne by the patients, especially at first. Bromide of Potassium is said to be effectual in soothing the patients, although it may not induce sleep. The psychical irritability and depression must be combated on general principles by alcoholic stimulants, which are best exhibited in considerable quantities, and at short and regular intervals. The dietary should only include articles of the most easily digestable and nourishing kind. If the vomiting be very obstinate morphia should be given internally, with nutrient enemata, and mustard plasters on the abdomen. Warm baths are a source of immense comfort to such patients, and may be advantageously alternated with cold douche or sitz baths.*

The acute mania occasionally observed may be distingnished from delirious potatorium chiefly by its shorter duration; it never persists more than forty-eight hours, and, so far as regards the prognosis of the case, is of no importance whatever. The absolute certainty that it will not last longer than a given time renders treatment rather superfluous. It is, however, *of the last importance to have the patient well* watched. Bromide of potassium given in full doses will sometimes be found useful in mitigating the worst feature of this condition.

Now and then it happens that after eight or ten days of abstinence, when the severest symptoms have subsided and convalescence seems fairly established, the medical attendant is puzzled by a curious phenomenon (observed by Drs. Levinstein, Nussbaum, and others), namely, the sudden re-appearance of the entire group of symptoms in all their former distressing intensity, perhaps even exaggerated. But neither doctor nor patient need be discouraged. Thirty to forty hours is the utmost duration of the relapse, and the ultimate convalescence is by no means thereby retarded.

In one of his very practical and eloquent clinical lectures of last summer's semestal, Dr. Von Nussbaum stated that his long experience among sufferers from chronic morphia poisoning had compelled him to accept the apparently unreasonable conclusion that the distress experienced by such patients when their occustomed stimulant is withheld must be considered as snbjective, and (enie Geistrokraulheit) possibly akin to hysteria. Patients might be cured, he affirmed, not only without suffering, but without being conscious of the process, if only their medical attendant would enact the necessary deception with regard to his patient until after its accomplishment—a deception which, in view of the immense benefit accruing to the patient, may certainly be justifiable, if not altogether laudable.

* De Quincey says the only medical treatment of any real service to him was a prescription, by a Scotch physician, of "Ammoniated Tincture of Valerian." He does not mention what precise benefit he derived from the medicine, although it was probably intended to alleviate the intense mental depression; indeed, he does not speak much of any but psychological symptoms at all. But his case was hardly analogous to those under consideration; the drug was opium, and the treatment gradual self-deprivation extending over a consider-able period of time.

For Dr. Nussbaum's method, it is of the last importance that the practitioner should gain the full confidence of his patient. He must contrive some pretext for securing his syringe, and for administering all subsequent injections with his own hands, having great care not to risk failure by precipitation or impatience. It is better not to commence the treatment at once, but for a few days to inject as much as the patient is accustomed to tolerate, in order to lull any suspicions he may entertain. Thus when the practitioner feels himself trusted, he may begin gradually to diminish the doses, substituting for the morphia withheld the same quantity of sugar solution. If the patient have misgivings, or show symptoms of distress, the doses must be immediately raised, and the experiment postponed for a little time. Great caution and inexhaustible patience are requisite for this method of treatment, but assuming the practitioner to be fairly endowed with these qualities, he may—so Professor Nussbaum assures his class—confidently expect the best results. Professor Nussbaum has cured all his cases of chronic morphia poisoning in periods of time, varying *ceteris paribus*, with the quantity of the drug used, and averaging from four to five weeks. Then, when the morphia is entirely withdrawn, and the injections have consisted during a week or ten days of nothing more than a solution of villainous German sugar, the patient—to his astonishment—hears of his cure.

This straightforward relation of experience by so skilful and acute an observer as Professor Nussbaum—perhaps the only medical man who has had the rare advantage of studying the psychological powers of morphia *in propria persona*—is the most important evidence recently contributed to the question, and although it is evidence which is supported neither by the testimony of other medical men nor by the educational traditions of our professton, yet both analogy and abstract theory are powerless to furnish any argument to invalidate it. It is true there seems to be a sort of natural law that the energy put forth by the human organisms in tolerating a noxious drug, or, in orther words, adapting itself to new conditions of existence, is a rough measure of the adaptive energy which the organism will again display when such conditions are removed. But many drugs show peculiarities which practically stamp them as exceptions to such a law. For example, the power of tolerating tobacco is nearly always acquired slowly and with much difficulty; few drugs excite to a greater degree the antagonistic energy —if one may so speak—of the organism. Yet tobacco may be used during a whole adult lifetime, and in considerable quantities, without causing the smallest mischief, either organic or functional, and if withheld when tolerance is established, the worst consequences will be the ordinary craving of any periodically recurring appetite, less for the indulgence *per se* than because it has become habitual;* for in persons of healthy moral organization associations are stronger than appetites. But, in truth, we cannot reason on the subject; we must take our facts as we find them, We are in utter ignorance with regard to the laws which govern the action of drugs; we know neither what constitutes susceptibility to their influence, why in some individual cases they are so inert, in others so destructively or beneficially potent, nor why that susceptibility should be modified by the age or the idiosyncracy of the individual.

* These experiments of Professor Nussbaum seem corroborated by other facts in medicine. We all know how patients, when it is necessary to wean them from opium, may be cheated into obtaining sleep by bread pills and water injections. It is probable, therefore, that the distress experienced in abstention from the long-continued use of some drug is due less to the craving for an accustomed stimulus as necessary to the well-being, or rather the well-feeling of the individual, than to the disruption of those associated actions which constitute habit. One of the most powerful distressing emotions of our nature—the dread of death—is probably the expression of a sub-conscious feeling of reluctance to break the habit of living, and is not therefore in full force, either in the young, who are not yet tolerant of life; or in the aged, to whom vigorous life is no longer habit.

But even while assuming, as we are bound to do, the correctness of Dr. Nussbaum's observations, the fact yet remains that in some cases we have to treat the necessary deception may be impossible or unjustifiable. If, then, the the ordinary treatment be adopted, of sudden and complete deprivation, we must expect such symptoms as we have endeavoured to sketch will rapidly ensue, and their non-appearance after the lapse of three or four days of abstinence must be regarded as a proof that the patient has again had recourse to injections. In all such cases of doubt the urine should be examined, but it must be remembered that in *chronic* morphia poisoning traces of the drug may be detected as long as from seven to eight days after its withdrawal. In cases of acute poisoning the whole of the morphia will be eliminated by the kidneys in a little more than three days.

The examination of urine for morphia is an important test, and must be conducted with care. The most simple method is that of Professor Dragendorff. The mode of procedure is as follows:—"A given quantity of urine should be taken, ssy 100 C.C., and evaporated in a water-bottle to dryness. The residue must then be mixed with absolute alcohol, the insoluble salts removed by filtration, and the alcoholic filtrate again evaporated. The residue is mixed with water and again filtered, and, to remove the urea, is shaken with small quantities of amylic alcohol so long as it will take up colouring matter.

The amylic alcohol does not as yet contain morphia, but urea only. It is therefore evaporated, and ammonia is added to the watery solution so as to free the morphia contained therein from combination with its acid salts. This alkaline watery solution is again shaken with amylic alcohol three or four times, and finally these four extracts are mixed, the amylic alcohol being removed by evaporation and distillation. The residue contains the morphia, which can now be tested for by the ferric chloride test, or by the re-action of Husemann, testing with concentrated sulphuric acid to 302° F., and then adding dilute nitric acid.*

J. T. H.

EXAMINATION NEWS.

APOTHECARIES' HALL.

PRIMARY EXAMINATION.

M. D'Oyley Gilkes, John Rigby, W. P. Bothamley.

FINAL EXAMINATION.

Messrs. H. Dismoor, and F. B. J. Baldwin.

ROYAL COLLEGE OF PHYSICIANS, LONDON.

The following Guy's men have been admitted Licentiates:—G. B. W. Messum and E. J. Morley.

UNIVERSITY OF CAMBRIDGE.

THIRD M.B.

Mr. Stanley Taylor.

L.R.C.P. (Pass Examination.) October, 1878.

MATERIA MEDICA AND CHEMISTRY IN ITS RELATIONS TO PHARMACY, PATHOLOGY, AND TOXIOLOGY.

1.—Describe the manner in which the general officinal salts of magnesia are obtained, with their uses and doses.

2.—How is Chloral Hydrate prepared, and what are its therapeutic and toxic effects?

3.—Describe the preparations of Phosphorous, of Diluted Phosphoric Acid, and of the Hypophosphites of Soda and Lime. What are the therapeutic uses of these agents?

* Husemann, "Die Pflanzenstoffe." Berlin, 1871.

4.—What is meant by "Vascular Sedative?" Enumerate the medicines of this class. Give and explain the mode of preparation of Hydrocyanic Acid, and describe its therapeutic uses.

5.—How would glycerine be prepared from Olein? What is the chemical formula for glycerine? Describe its leading properties.

6.—How would you certainly distinguish the presence of lead in water? What are inorganic constituents in water which act as a protection against lead?

7.—Describe the kinds of sugar met with in the animal economy, and the various methods employed for their detection.

8.—In a case of poisoning by a Salt of Iodine, in what secretions during the life of the patient is it to be looked for, and what are the means to be employed for its detection?

MIDWIFERY AND DISEASES OF WOMEN.

1.—Describe the mechanism of delivery in Breech Presentations, mentionimg the dangers which may occur both to mother and child, and the method of obviating them.

2.—Give the symptoms, diagnosis, and treatment of Uterus Polypi.

3.—Comment on the following case:—

A young woman had scarcely been married three months, when she noticed her abdomen was rapidly increasing. The menses had ceased shortly after marriage. Before the end of another month she had arrived at the size of a woman seven months pregnant. She was then seized with severe cramping pains in the abdomen. These continuing she sent for her doctor. He prescribed sedatives, but with little relief. The distress continuing for two days, a consultation was held. It was clearly made out that there was no tumour before marriage, nor any chance of conception before time. It was also made out that it was the uterus which was enlarged; it was firm, and the os small and closed; tender to the touch. The pulse was 120 p.m.; skin hot, and the tongue dry.

4.—Give the causes and treatment of abortion antecedent to the fourth month of utero-gestation.

5.—Describe the various methods of treatment for Cystic Disease of the Ovary; state the conditions which would lead you to employ one method in preference to another.

MEDICINE, MEDICAL ANATOMY, AND THE PRINCIPLES OF PUBLIC HEALTH.

1.—How would you diagnose Hæmoptysis from other forms of Hæmorrhage? What would be your treatment of a case?

2.—Describe the anatomical changes occurring in Cirrhosis of the liver, and explain the manner in which the consequences of the diseased conditions are produced.

3.—Give the symptoms, progress, and treatment of chorea. State if there is any relation existing between the disease and rheumatism, and what morbid sound is frequently to be heard in connection with the heart.

4.—Give an outline of an ordinary case of Typhoid Fever, and enter fully into the question of treatment and general management of the patient up to convalescence.

5.—Define the position of the heart, and describe the heart's sound in health.

6.—If Scarlet Fever appeared in a town, what measures should be taken to prevent the spread of the disease?

The Presidents of the Physical Society acknowledge Subscriptions to the *Gazette* from the following gentlemen:—

J. W. Salvage.
G. L. Downes.
W. A. Slater.
W. Satchell.
Dr. Churton.
R. J. Tomlin.
Dr. Kingsford.
Dr. Oscar Jennings.
J. C. Clarke.
R. E. Carrington.
P. M. Wood.
Hugh R. Ker.
Thomas Joyce.

NOTES OF THE MONTH.

The following gentlemen are appointed House Surgeons and House Physicians, and will take their rota of duty in the order in which their names are placed for the ensuing six months:—

House Surgeons—Mr. Meek, Mr. Keep, Mr. Uhthoff.
House Physicians—Mr. Davy, Mr. Paddison, Mr. Crooke.

ON DUTY FOR JANUARY.

House Physicians—G. Mackern, J. C. Uhthoff. *Junior House Physician*—H. Davy. *House Surgeons*—C. Knox-Shaw, R. J. Wainewright. *Junior House Surgeon*—J. Meek. *Senior Resident Obstetric*—E. B. Granger. *Junior Resident Obstetric*—E. J. Morley.

RESIDENT DRESSERS.

January 1st.—Mr. Felix Jones (Mr. Bryant).
" 8th.—Mr. H. L. Bates (Mr. Durham).
" 15th.—Mr. A. Scott (Mr. Howse).
" 22nd.—Mr. D. D. Malpas (Mr. Cooper-Forster).
" 20th.—Mr. J. Briscoe (Mr. Bryant).

APPOINTMENTS.

Bryden, R. J., M.R.C.S., L.S.A., has been promoted to the post of Senior Assistant House Surgeon to the Sheffield Public Hospital and Dispensary, *vice* Clairemont, appointed House Surgeon.

Gilbert, P. F., has been appointed Assistant Surgeon to the Coldbath Fields prison.

We regret that, owing to severe indisposition, Dr. Pye-Smith is preventad from lecturing on Physiology. Mr. Golding-Bird is filling his place until he is sufficeintly convalescent to resume his duties.

We are glad to notice that W. H. Harsant, F.R.C.S., an old Guy's man, has been presented with a handsome testimonial on resigning his appointment as House Surgeon to the Bristol Royal Infirmary.

We greatly regret to have to announce the death of Mr. James Stocker, who died at Burnham, on Christmas Day, after an illness of only three or four days. His sudden death has deprived many old students of the pleasure of personally presenting to him a testimonial, which was being raised under the direction of the Consulting Staff. We understand that subscriptions will continue to be received by Mr. Lucas and Mr. Waddy for the benefit of the widow, who has long been paralysed.

Correspondence.

The Editor wishes it to be distinctly understood that he is not in any way responsible for opinions expressed by Correspondents.

TO THE EDITOR OF THE "*Guy's Hospital Gazette.*"

Sir,—I shall be much obliged if you will allow me in a few words to record my feeling of affectionate regard to the memory of the late Mr. James Stocker. Mr. Stocker's name has been associated with the Medical School of Guy's Hospital for nearly fifty years. He was a gentleman of singular purity of feeling, and by the integrity of his life, and his devotion to the interests of Guy's, deserved and obtained the sincere regard of the many hundreds of students who have passed through our school. There are many, and myself among the number, who owe much to the friendly advice and direction Mr. Stocker was ever

ready to give to the Student. Although he took no formal part in the teaching of Medicine or Surgery, he largely contributed by his experience,to enforce the best Lessons of the lecture Room, and by the simplicity of his life, and his deep sense of the high aims of our profession, he afforded an example, which all who had the pleasure of knowing him, will recall with unmingled satisfaction.

Some time before Mr. Stocker's decease, a movement was begun for presenting him with a testimonial, expressive of the feelings I now record. I cannot doubt that this movement will be so continued and extended, as to become a substantial proof, to Mrs. Stocker and her children, that he whose loss they have to mourn, and whose substantial aid, as father of the family, they now lose, has left behind him a memory, that many desire to honour. Mrs. Stocker has unfortunately long been a helplessinvalid, and two of the children have such weak health, as not to be able with any success, to fight the battle of life. Mr. Stocker was happily able to make for them a moderate provision, but I cannot doubt that the testimonial in question, though chiefly valued as an honour, will yet be very useful, as a substantial addition to income, at a time when all expenses are so great.

I am, yours truly,
WILLIAM W. GULL.

TO THE EDITOR OF "*Guy's Hospital Gazette.*"

SIR,—A writer in your last month's issue of the *Gazette* gives us a picture of the late Mr. Hilton.

It is always refreshing and instructive to read about a fine man, and to us Guy's men the portrait of a great Guy's man is especially interesting. At the same time I think it very much to be regretted that the writer has made his sketch of Mr. Hilton the occasion of riding a tilt against the Evolutionists. Not that the doctrine of Evolution ought more than other doctrines to escape being canvassed in a philosophical spirit, but to make indirect attacks and imputations of Materialism against the doctrine and its supporters is, I repeat, very much to be regretted in any Guy's man having the influence which your writer, by his evident long acquaintance with Mr. Hilton, must exercise.

Let us try if we can find any causes in Mr. Hilton's career which may explain—to some extent, at least—how it was that a man with his philosophical mind should remain a *Final causationist* as opposed to the Evolutionists.

I use the word *remain*, for though Evolutionism is older than Darwinism, it was Darwin's book on "The Origin of Species," published in 1859, that popularised and made tenable the belief in Evolution. Mr. Hilton took his M.R.C.S. in 1827; he had entered on his course years before anyone had heard of "Natural Selection." Hilton was great as an anatomist, but he would have claimed to be a surgeon first and an anatomist, a physiologist, a pathologist afterwards. In anatomy he had a hundred eyes where other men have two, and his quick sense recognised "design" at every turn. He was a surgeon; a man whose one chief aim is to press into the service of his art all points in anatomy, physiology, pathology, physics, which will aid him in his endeavours to heal the damaged part.

We know from "Rest and Pain" how much Hilton was on the look out for living forces and adaptabilities to help him in healing. He who looks with Hilton's eyes will find endless adjustments of means to ends—to health and activity, when all is in harmony—to destruction when the harmony is broken—to healing when the wise surgeon is there to direct.

To such an one "Why" is so abundantly and satisfactorily answered that we need not wonder at his being content to abide without asking "How."

We claim for surgery that it be called the greatest of arts. It *is* a great art, and we have seen how it is large enough for so large a mind as Hilton's.

But yet the "Why" of surgery and the surgical anatomist is not co-extensive with the demands of the mind. No one will object to questions put in the terms of final causation if we draw a line round them on the understanding that it is useful to surgical art so to put them. Moreover, while learning the uses of parts and structures it is convenient to use the same terms.

Dr. Moxon, writing in the Guy's Hospital Report for 1870*, says, "It is true that minute knowledge of diseased changes does not lead to any indication for medical treatment; for this I believe may be laid down as the result of therapeutics directed to the relief of anatomical change—that *there is no medical remedy for anatomical change.*"

Again, "In trying to discover anatomical changes the interest that a physician has in his case is diverted to the anatomical aspect of the case. And yet when he has discovered the anatomy, he is faced by a thing which he has no means to cope with. Changed anatomy holds out no hope to him who is to treat by drugs."

Again, "To what end, then, is it desirable to know anatomical changes? Certainly, when we possess the power, and intend to employ the power, of altering these by direct operative or manipulative interference."

" . . . Surgery seeks to know the actual condition of the individual part, that it may take advantage of whatever promises to admit of operative relief."

" . . . If Medicine seeks to precisely localise the anatomical change, and to discern its kind, it forgets its proper aim. Its proper aim is to recognise and act upon what is now knowable before it in the patient."

If this is true, why do physicians pursue medicine on pathological lines with so much zeal? Is it for some end in therapeutics which they can see a-head, or are they pursuing science for its own sake?

Of course, we all know that science has nothing to do with "Why," but altogether with "How."

Ask any man who is pursuing science for its own sake, and he will tell you freely and without shame that science leads him captive, not he science.

Now I come to the charge of Materialism against Evolutionists. The first question science asks is, "What is doing about us?" The next question, "How is it done?" Then, irresistibly led on, "How comes it to be doing as it is doing now?" Many unscientific persons imagine the work of science to be limited to the first series of questions, but no one will call it Materialistic to pass to the next. When, however, we come in logical sequence to the third class, we are told to be reverent—as if we had not been reverent all along—and recognise final causation as our bourne; if we pass that we are plunged into Materialism.

What is it to be Materialistic? To be morally and intellectually insensitive to spiritual forces. What is it to be spiritual? To be responsive to spiritual forces. It is not spiritual to draw a line across the universe, to call all on one side material, and to say to science, "There, investigate *that;* but if you pass *my* line you will be intruding Materialism into the domain of spirit."

I am, Sir,
Your obedient servant,
J. M. HOBSON.

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* "On a Clinical Nomenclature of Disease" pp. 489—491.

GUY'S HOSPITAL GAZETTE,
FEBRUARY, 1879.

REFLEX PARAPLEGIA—CIRCUMCISION—IMPROVEMENT.

The following interesting case was admitted into John ward under Dr. Wilks, on December 18th, 1879, and came under the care of Dr. Pavy, when he took the Clinical Wards on January 1st, 1879.

W. W. æt. 30, a Blacksmith by trade.

Family History.—Good.

Personal History.—Is married and has one child who is healthy. No history of any venereal disease. At the age of 20 received an injury to the back whilst lifting some iron. This caused him severe pain on any attempt to sit up, and for this cause he was obliged to keep his bed forty-one weeks. With this exception his health has always been good until seven weeks ago at this time he was working in water, and noticed that both his legs felt numb and the right stiff. He gave up work a week after this on account of increasing stiffnes in the right leg, and more numbness of the left. He also noticed that he could not pass his water freely.

He was obliged to take to his bed four weeks ago, at that time the right leg had become quite rigid, and the left was getting so. Both legs felt numb, but in both the sensation was good.

On admission.—Patient is a fairly healthy looking man, and has a small angular curvature in the upper part of the dorsal region.

Respiratory, Circulatory and *Alimentary* systems normal. Patient has a very long prepuce and he has retention of his urine, which is ammoniacal. Urine to be drawn off by catheter twice a day.

Nervous System.—Normal, except his legs.

Right Leg.—Is quite rigid, and the foot extended. It requires great force to bend the knee, and it instantly becomes extended on letting go the leg.

When he was stood upright the ankle bent inwards. He said the leg felt numb, but he could distinguish hot from cold things, and rough from smooth. He complains of pain in the right groin. Muscles contract well to 10 cells of the continuous current, but feebly to Faradisation.

Left Leg.—Patient can bend this at the knee a little. He says that it feels numb. Has good sensation in it. No pain in the groin, muscles act well to Faradisation not to the continuous current.

Dec. 20th—Bladder washed out with Thymol solution.

Dec. 31st—His legs remain in the same state; was circumcised this afternoon, and he moved his right leg and bent it a little at the knee joint, within an hour of the operation.

Jan. 1st—Has more power over both his legs, they are not so numb. Passed his urine without use of catheter.

Jan. 6.—His legs continue to improve. The muscles of both contract readily to Faradisation. The right requiring 15 cells of the continuous current to make them contract as when admitted.

Jan. 18th.—Has gradually improved, walks about the ward fairly well.

Jan. 21st.—Patient went out. Has perfect control over his bladder, walks well but is very weak.

PERCY MOORE WOOD.

NOTES ON CARDIAC BRUITS.

As there are at present several interesting cases of cardiac disease in the medical wards, a few remarks upon them might not be uninteresting to the readers of the *Gazette*. *Anæmic Bruits* are interesting, not only on account of the difficulty in accounting for the cause of them, but also from their varied nature. It is often difficult to be certain of the anæmic origin of such a bruit, for the patients in whom they occur generally present themselves with the abnormal condition already developed, and it is seldom that some point in their history may not be construed as a cause for the origin of the cardiac affection. But when the bruit is developed for the first time after an attack of hæmorrhage, resulting in severe anæmia, we can be almost certain that the abnormal sound is due in some way or other, directly or indirectly to the loss of blood. The following cases, more particularly the former of the two, illustrate the point.

C.W., æt. 50. admitted into Philip under Dr. Moxon, December 23rd. 1878, with symptoms of hepatic cirrhosis, the heart sounds are reported as normal. Fluid appeared in the abdomen and rapidly increased in amount, on this account paracentesis abdominis was performed on the night of Jan. 6th. The withdrawal of the fluid was followed after a few hours by profuse hæmatemesis, which being again repeated on the following day, reduced the man to a condition of extreme anæmia. On the morning of the 9th a loud systolic bruit was detected, localised to the region of the third left costal cartilage. Though at first localised to this region the bruit after two or three days became audible along the course of the aorta, and assumed very much the character of a somewhat harsh systolic aortic bruit. With slight variations of character and distinctness it has continued much the same until the present time; the man is still in a very anæmic state.

A somewhat similar case is at present in No. 2 Addison. The patient a woman, æt. 28, was admitted on Jan. 11th, in a bloodless and somewhat collapsed condition, resulting from severe hæmatemisis of about

a week's duration. A systolic bruit was detected at the base; this remained much the same for ten or twelve days, but has now disappeared.

What is the physical cause of such a bruit? It is generally attributed to the watery state of the blood; as it is supposed that blood in such a condition is more liable to be thrown into vibrations during its flow. Chanveau opposes this theory on the ground that the production of murmurs is independent of the nature of the fluid in which they are formed. He propounds another which is based upon observations made on horses rendered anæmic by loss of blood. In these the mass of blood is greatly reduced, and as a result the arteries, and also the heart and its orifices are diminished in size, to adjust themselves to the diminished volume of blood. But the aorta and pulmonary artery retract less in proportion than the heart and its orifices, and consequently we have similar conditions to those present when the aortic or pulmonary orifice is contracted; the blood passes suddenly from a narrow into a wider channel. Such a sudden change of the calibre of a vessel is the essential cause, according to Chanveau, of all cardiac disease and other vascular bruits (of Dr. Fagge's article in the fifth volume of Reynold's system).

It seems difficult to believe that such an accommodation of the cardiac orifices, surrounded as they are by a tendinous ring, could occur within the short period of two days, as was the case in the man above mentioned.

Another theory is held by some, which, however, only applies to cases where the anæmia is of some duration. This accounts for the occurrence of apex systolic bruits in anæmia, by the supposition that dilatation of the ventricle has occurred, as a secondary result of the presence of fatty degeneration of the heart. Such fatty degeneration is found well developed in cases of pernicious anæmia, and also to a less extent in other forms of anæmia.

Another very interesting case at present in the Hospital is worthy of note.

T.W., æt. 16, Baker's assistant, admitted into Philip under Dr. Moxon, on Jan. 8th, 1879, with symptoms of acute Bright's disease. As such there was no special interest in the case, except that in a boy of this age cold was unlikely as a cause, and a search was made for some evidence of scarlatina: the history was negative, but a little scaling was found about the fingers. Through some misunderstanding he was ordered Tinct. Digitalis ʒ i. tds. instead of a similar quantity of the infusion, and after taking four doses began to suffer from symptoms of poisoning. He was drowsy, had a slow (40 to 50) and irregular pulse, and vomited frequently, some of the vomited matter being of a bright emerald green colour. But the particular point in the case which has led to its introduction under the head of cardiac bruit was that of the occurrence of the other symptoms of Digitalis poisoning. A murmur first appeared after the fourth dose of the medicine as a somewhat harsh systolic sound very localised to the region of the third right costal cartilage. On the evening of the same day it had disappeared from this position but was heard loudly at the sternal end of third left space, to which it remained localised and did not finally disappear for ten or twelve days. During that time it varied very much in intensity, at times being loud and harsh, at others scarcely audible. At present a slight roughening of the first sound is all that can be detected. Was this bruit caused by the Digitalis? This is an interesting question, for in the horse it has been found that a bruit due to mitral regurgitation is produced by the administration of Digitalis: the explanation of this being that the irregular contraction of the musculi papillares caused imperfect closure of the mitral valve. The murmur, in the case of the boy, had somewhat the sound of a pericardial rub, but there were no symptoms of pericarditis, which is a serious and often fatal complication of kidney disease. It is noticeable that the murmur began to disappear about the same time as the pulse was returning to its normal rate.

HOMŒOPATHY.

Our attention has been turned of late by the appearance of three letters in the *Gazette*, two from an Undergraduate and one from a Graduate, towards the great fundamental law by which the so-called homœopathic practitioners of medicine of the present day still profess to be guided in their treatment of disease, "Similia similibus curantur." This, together with the law of infinitesimal dosage, forms, as every one knows, the principle on which Hahnemann founded his School of Homœopathy.

Both laws are too manifestly absurd to any one who is in the least acquainted with disease and its successful and rational treatment to require, or in fact, to admit, of any refutation. The idea of their absurdity must be accepted as an ultimate fact or of the conscience of every honest and educated physician. Still it may not be uninteresting or even unprofitable to study for a moment and to attempt to define in some measure the apparent reasons why this chimera still has a hold upon the ideas of men, in absolutely large numbers and in some cases, of minds otherwise remarkable for their clear and easy perception of truth and reason.

Now, seeing that people in general, outside the medical profession, have only their own small individual experience, unaided by any technical knowledge, by which to judge, it is no marvel that they have, from time to time, ever since the world began, been the dupes and victims of the numberless forms of quackery

and charlatanism which have from time to time sprung up amongst us. Southey has truly remarked, "too naturally, man is a dupeable animal; and quacks in medicine, quacks in religion, and quacks in politics know this, and live upon the knowledge of it."

We cannot now understand by what process of reasoning, men and sometimes men the greatest of their age, in years gone by, came to believe, for example, in the doctrines of astrology, alchemy, or sorcery, yet in our own day we see numbers of educated persons, from our greatest statesmen downwards, still believing in the absurdities of the doctrines of Homœopathy, Spiritualism, &c., &c.

Since the unlearned in medicine have, as before said, no technical knowledge by which to guide their small experience in arriving at a just conclusion upon the merits of any certain system of medicine, they are unacquainted with the fact that almost all diseases have a great tendency to recover by the unaided sanitive processes of the body; and that individuals, suffering from acute disease, rarely die, though left entirely without medicinal aid. It is to this fact, the tendency of all morbid processes toward recovery, that every system of quackery down to, and including Homœopathy, has owed the popularity which it has for a longer or shorter period enjoyed. Every quack medicine, from the universal panacea of the old Elixir of Life, or Berkley's Tar Water, or Perkins' Tractors, down to Parr's or Morrison's or Holloway's Pills has as every one knows, its hundreds or thousands of supposed cures, or coincidences to boast of. Each and every one of the inventors of these various medicines, as well as the propounders of every illegitimate medical doctrine or system, has always appealed to this "infallible experience" and not in vain; indeed, as a rule, the more absurd and extravagant the statement has been in these matters the greater the number of credulous people who will be forthcoming, with some supposed fact in support of it.

It is this *post hoc propter hoc* system of reasoning that the honest and intelligent medical man has always to combat with his lay brethren, and not unfrequently with himself.

Because a man takes ten drops of this or fifteen grains of that three times a day and recovers, this is sufficient evidence for the lay mind, and even sometimes, I fear, for the medical too, upon which to declare the drug a true and efficient remedy.

Indeed, with the non-medical public, the difficulty of distinguishing between what is a cure by nature alone and a cure by nature assisted or controlled by art, makes up the sum of the difficulty of distinguishing between true and spurious medical treatment.

Thus it is that when a man in a state of disease takes his homœopathic dose of a decillionth of a grain of oyster-shell or a millionth of a grain of common domestic salt in its "thirtieth dilution" and afterwards recovers, he comes, not unnaturally, but very illogically to the conclusion that he at last has hit upon the only true and infallible system of medicine. While he thinks that his oyster-shell or salt has cured his disease, his recovery is really due to the old "reparative power of nature" aided, and of this homœopathists as well as others wisely take advantage, by a proper regimen and strict diet, with we may say perhaps, a good deal of medical faith and consequent peace of mind thrown in.

"Pure experience" says Hahnemann" is the only, the infallable, oracle of medicine, and the 'idle declamations (of opponents) must cease before the dicta of infallible experience." So argued, in former times, Bishop Berkley, regarding the universal curative effects of tar-water, so argued Dr. Soloman regarding his Balm of Gilead, Mr. Perkins regarding his Metallic Tractors, and Dr. Morrison regarding his pills.

When the Homœopathic doctor treats his patient with drugs in infinitesimal doses, and abstains from giving, openly or secretly, the ordinary so-called allopathic remedies, he must rely solely upon the *vis medicatrix naturæ* together with the curative powers of diet and regimen with, as before said, a large amount of medical faith for the successful issue of the case, for no sane man can believe that such bodies as chalk or salt, or any other, organic or inorganic, in doses of one millionth of a grain can in any way affect the human organism either for good or evil.

And here I would say that according to Hahnemann himself, the smaller the dose the greater its power, and further that he even hints, or rather declares, that by reducing the dose physically, you endue it with what he calls a spiritual power; a power which some of his followers were not slow to claim for Hahnemann himself.

To give some idea of what Hahnemann meant by an infinitesimal dose, I quote the following:—"A row of homœopathic globules, extended enough to form a string 25,000 miles long, and which consequently could encircle the earth, would be passed over by a ray of light in the eight part of a second, or in the twinkling of an eye." But it would require a ray of light to travel millions, of millions, of millions, of millions of years, before it could pass from one end to another of a single grain of sulphur, or of any other homœopathic decillionth globules, such as Hahnemann used and declared to be both in acute and chronic diseases the proper medical dose, "not to be refuted by any experience in the world."

(See Homœopathy; Its Tenets and Tendencies, by Sir James Simpson).

Is not one's reason insulted when one is asked to consider, even for a single moment, whether there may not be some element of truth in a system founded by a man who was bold enough to attempt (and with a measure of success) to foist sueh transcendental gibberish upon his fellows? Human credulity must have

reached the length of its tether when such things as these come to be believed in.

Thus I have, I think, written enough to show that the Homœopath of the present day, who does not indulge in the so-called allopathic dosage, either openly or secretly, must if he is a reasoning man, trust entirely to other means than physic for the cure of his patient. Does he do this?

"Everywhere through Hahnemann's works he declares that while the legitimate system of medicine is an old 'mischievous, non-healing art which tortures patients, wastes their strength and fluids and shortens their lives,' his homœopathic mode of cure is 'the only true method of restoring the economy from disease to health,' is a salutary and blessed business the only method by which patients can be 'really, rapidly, permanently, and evidently cured,' etc., etc. But does not (to use Hahnemann's own words) such pretension reach the climax of boastful charlatanism and mendacious delusion?"

NOTE—During the rapid construction of this paper I have laid freely under contribution the work quoted above, viz.—Homœopathy: Its Tenets and Tendencies, by J. Y. Simpson, M.D., Edin. 1853.

A. G. BARRS.

NOTES OF A CASE OF CARBOLIC ACID POISONING.

A. W. Hull, æt. 27, residing in Bermondsey, attempted to commit suicide by taking Carbolic Acid. He had previously (about a month ago) taken Oxalic Acid, with the same intention.

At 7·15 p.m., on the 25th of October he swallowed 2½ ozs., as nearly as can be ascertained, of common black Carbolic Acid, and within five minutes he was insensible. He was immediately carried to a doctor in the neighbourhood, who gave him an emetic and several ounces of olive oil. He describes the immediate sensations after swallowing the acid as a burning pain in throat and fauces. He was brought to the Hospital on a stretcher, apparently drowsy, but very easily roused, and rational. Face pale, skin moist but not sweating. Pupils normal. Breathing normal. Undue restlessness of the lips and dry glazed appearance of mucous membrane, but no whitening anywhere. Strong odour of carbolic about the mouth. Tongue normal. Fauces a little white, and apparently the seat of burning pain. He feels sick, but there is no vomiting. Slight substernal pain.

On the following morning he seemed better. Vomited once during the night: bowels still confined. Complained of great pain at the upper part of the sternum, also in his pharynx. There was no whitening of the skin to be seen anywhere on his lips or chin, but there were a few white patches on the side of his tongue, and on the tonsils: tongue completely denuded of epithelium. No odour of carbolic acid in his breath. Very little urine passed, of almost normal colour. Dr. Stevenson found traces of acid in both urine and vomit. Pulse, 80. Temperature, 98·8°. Ordered milk diet and M. M. c. Mis. ℥j. omni mane.

October 27th.—He is gradually improving. There has been no more sickness, and his mouth and throat are less painful. Bowels open. Very little urine passed, colour normal; what has passed contains slight traces of carbolic acid. Pulse and temperature normal.

October 28th.—The effects of the poison have nearly disappeared. His tongue and pharynx are nearly of their normal colour and appearance, and he is able to speak and swallow without much difficulty.

FATTY EMBOLISM IN FRACTURES.

As some interest in the above has probably been aroused by the case reported in our last issue, we have extracted the following from the *London Medical Record* of January 15th.

In 1862, Zenker, making an autopsy on the body of a man that had been crushed between two waggons, found the capillaries of the lungs filled with fat. He believed that this fat might have come from the stomach, or from the liver, which was in a state of fatty degeneration, for both these organs had been injured. Zenker considered this fact very interesting from an anatomical point of view, but he did not know the relation which existed between fatty embolon and traumatisms, so did not record as of great practical importance the case which he had observed. In the same year Wagner published many cases of fatty embolon, but he regarded the fat as originating in a metamorphosis of pus, and as one of the causes of pyæmia. It was not until 1865 that Wagner and Busch recognised in osseous alterations the nature and causes of fatty embolon, each giving an exact and complete description, nearly at the same time; from that date the doctrine of fatty embolon has rested upon an unattackable basis, and pathological, clinical, and experimental works have rapidly followed one another. It was proved in every fracture that there was a fatty embolon, having its origin in the medulla of the bones, that this embolon was more or less considerable, that it was rarely localized in the lung, but it was met with in every tissue of the organism. Then it was shown that in a certain number of cases the diagnosis could be made during life, and that it should be regarded as a frequent cause of death; it was pointed out that by this mechanism a fatal termination was brought about in a number of those cases of more or less sudden death observed after severe injuries, and up to this date attributed, in a general way, to what is designated in practical surgery by the name of shock. With regard to this it is sufficient to mention the works of Bergmann, Bzerny, Halm, and Flourney.

From the researches of the different authors enumerated, it follows that fatty embolon, general or localised in the lung, is much more common than is frequently supposed, and that it is produced not only in all fractures, simple or complicated, but it may be observed, without reference to injury, in all cases where the bones are altered in structure from some cause or other; in such the fact is less grave. The number of cases of fatty embolon observed under circumstances about to be mentioned, are actually considerable, reaching 140, and all, or nearly all, have been observed in Germany, but two such observations were noted in the ancient faculty of Strasburg. Having lately met with two very clear cases of pulmonary fatty embolon, following osseous alterations, we

publish them to draw attention to a subject little known to us, still less studied, but the importance of which should not be lost sight of in reference to published statistics; a doubly important subject for consideration, not only because it enlarges the scope of pathological knowledge, but more especially because it makes us recognise a very fatal complication of great injuries, and which, therefore, has considerable clinical importance from a prognostic point of view. On the 28th of October last, a young man, aged 16, was admitted into the Hotel Dieu, in the service of Dr. Cusco, who had had his right leg crushed by a tramway. A certain quantity of blood was lost, and the patient sank about an hour after admission, being sensible to the end. The autopsy was made by the interne, M. Bruchet, and a fracture of both bones of the leg at the middle third was found, and also a fissure of the tibia reaching the upper articulation. He very kindly sent me the lungs and the heart. The vena cava had been previously ligatured to permit of an examination of the blood in the right ventricle. The microscopical examination was made in the laboratory of Professor Vulpian, and revealed the following particulars. The blood of the right ventricle, obtained by making a puncture in the ventricular wall previously washed with ether, contained a large quantity of fat in the form of drops, and recognisable by its micro-chemical characters, disappearing under the action of ether, and taking on a black coloration under the influence of osmic acid. The vessels of the lungs were gorged and literally injected with fat; sections of the parenchymatous tissue of the lung cut with scissors and examined with the microscope, showed in the interior of the vessels, arterioles, veins, and capillaries, elongated masses, three, four, and five millimètres in length, embellished with a special refulgency, disappearing under the action of ether, and becoming a deep black colour with osmic acid. These globules of fat were so abundant at certain points that they designated not only the perilobular vascular network, but also the alveolar capillary network. An examination practised at all points of the two lungs gave us the same results. The second case, not less instructive than the first, came from the service of Dr. Brouardel at St. Antoine. The lungs, which we have examined in conjunction with M. Mayor, were sent by M. Marchand, interne of the service. They were taken from a man who had died thirty-six hours after a fracture of the right parietal bone, and, as in the preceding case, the pulmonary vessels contained more or less fat. In both cases no other viscera than the lungs were examined for fatty embolon. The two cases which we here report are absolute examples demonstrating fatty embolon after injury to bones; in this note we do not wish to enquire the part the fatty embolon took in causing death in these two cases. In the first we see but little that could be put down to any other cause; this is a subject which we propose to study more completely in the future, for cases of fatty embolon are in reality far from being rare, and we are persuaded will daily become more frequent when researches are undertaken in those who have succumbed from injuries. The two cases here reported resemble on all points those which have been made public in Germany of late years, and are confirmations of the published facts of different authors who have enquired into the question; but, as was said previously, we have believed it right to publish them, to draw attention to a subject worthy of study from every point of view, for, well as the doctrine of fatty embolon has been expounded in the faculty's course by Professors Vulpian and Charcot, it does not seem, up to the present time, to have attracted the attention of the medical world.

CLINICAL ROOM.

Dr. Pavy kindly lent us an apparatus for testing the quantity of sugar in urine according to the new method which he has lately communicated to the Royal Society. We have three cases of diabetes in the ward so that although we have only had the apparatus a short time, it has been in daily use, and we can fully testify as to its greater accuracy and convenience as compared with the old method.

Appended is a practical account of the apparatus and mode of use.

It consists of two upright graduated tubes, each capable of holding 100 C.C., fixed in a double retort stand. In one is placed an unlimited quantity of ammoniated copper solution for measuring purposes, and in the other 100 C.C., of urine, diluted to 1 in 10 of water. Affixed to the Urinal burette by an india-rubber tube compressed with a spring clamp, acting as a cap, is a small flask, containing 40 C.C., of the copper solution, measured off from the graduated tube, with a double perforated cork; through one aperture passes the urine, and the other allows the escape of the ammonia, which for convenience sake is conveyed by an india-rubber tube into an Acid solution. The flask is now heated with a spirit lamp until the copper solution just boils and by the aid of the spring clamp a few drops of urine are admitted. The solution is kept gently boiling and the drops of urine continually let in until the colour is completely lost which may be best detected by keeping a sheet of white paper behind the flask. It should be noted that as soon as the colour begins to fade the drops should be let in more slowly. The quantity of diluted urine used is now measured off from the graduated tube and the quantity of sugar calculated thus :—

Divide 2 into the amount of dilution (which in all cases should be at least 1 in 10) by the number of Cubic Centimeters of diluted urine required to decolorize completely the fluid in the flask. This gives the per centage of sugar. To find the number of grains per ounce of urine, multiply the dividend by 4.375. Thus supposing the amount of dilution be 1 oz. urine to 10 oz. water and and the quantity of diluted urine used for complete decolorization 5 C.C., then $2 \times 10 \div 5 = 4$ the per centage of sugar in the urine; and $4 \times 4.375 = 17.5$ or $17\frac{1}{2}$ grains of sugar per ounce.

For the rationale of this calculation we refer our readers to the recent Medical journals.

Correspondence.

The Editor wishes it to be distinctly understood that he is not in any way responsible for opinions expressed by Correspondents.

TO THE EDITOR OF THE "*Guy's Hospital Gazette.*"

SIR,

I wish to correct a few mistakes which were made in printing my article on Galvano Puncture in your last issue. On page 4, seven lines from the bottom, "*for* five minutes" should read "*in* five minutes." On page 5, seventeen lines from the end of the first column "*it was at once remedied*" should form part of the preceding sentence. In the eight line from the end the sentence "*Cured nil*" should not exist, and the word "*cured*" should only be separated from what preceded by a comma.

Since writing this article (in November) a successful case of Galvano Puncture has been published by Dr. Bucquoy;

Yours truly,

OSCAR JENNINGS.

GUY'S HOSPITAL GAZETTE,

FEBRUARY, 1879.

NOTHING, it is said, has been for centuries consecrated by public admiration without possessing sterling excellence in a high degree. If this be true, no doubt should exist as to the value of statistics. Have they not been collected from time immemorial, and has not experience so fully demonstrated their utility that they are collected now? And yet there is hardly a point about which men differ more, or about which they express their opinions more freely.

On the one hand we find men of more or less eminence whose whole object in life is to collect everything into a categorical form. If one ventures an opinion on any subject, one is asked, do statistics prove it?—if one denies an absurdity we find that "it is clearly deducible from statistics." Such a man talks grandly of the general experience of the profession, and blames all individual experience as presumptuous. He worships statistics and disbelieves his senses. Other men of equal intelligence sneer altogether at their value. "You can prove anything by statistics," is their favourite expression, whenever a number of cases are appealed to, "I never believe statistics" is their last answer to a victorious argument. This difference of opinion is strange when we consider that a "collection of *facts* respecting any one subject" is dealt with. Facts surely cannot mislead: they must be sure and unalterable. Someone may perhaps answer that statistics are not always a collection of facts; or rather perhaps that a collection of *apparent* facts is often made to stand for statistics. He would not degrade the word by applying it, for instance, to that collection of a hundred and one cures with which an enterprising quack advertises his nostrum; and yet the individuals who believed that they were cured surely ought to have known. It might be better to call these letters testimonials, and then anyone would be able to appreciate their value who has once read his own numerous virtues detailed for the first time by the teacher who esteems him all the more because he is utterly ignorant of his name and character. But even if we call them testimonials, the fact remains that the cures were *apparent*, and this is important.

In just the same way might a medical man show that aqua. menth. pip. was a purgative, narcotic, or alterative. He could always collect cases from amongst his female patients, who would tell him it had had these actions, and thus he could make up his statistics. Or in another direction how easy it would be to prove that even now miracles are daily met with. We see distinguished physicians puzzled over this or that case of Paralysis or Aphonia, and then how quickly moral means, plus the galvanic battery, effect their cure. Can we doubt that the word of an enthusist, a few drops of Holy Water, or the relics of a saint, would effect the same end? and can we blame anyone ignorant of the vagaries of Hysteria for collecting statistics in proof of miraculous power? Plainly the value of statistics depends on the powers of their collector, to distinguish *real* from *apparent* facts. It depends too on his honesty. You *can* prove anything by statistics if you carefully cook them.

A man might even prove that Antiseptic Surgery was not as successful as its old-fashioned opponent, if he only recorded his "brilliant" cases, and maintained a judicious silence about his deaths from Pyæmia. But if statistics are honestly collected by a competent man, they are invaluable, giving as they do, the experience of a large number of men. We can't get on without them. Every man collects them for himself and then calls them "his experience." He remembers a case of such and such a disease, which was brought to a brilliant issue. He may call it "his experience," but as one of our staff mentioned the other day, it is his statistics, in which 100 per cent. of the cases were successful. Statistics, then, can be valuable, they can be valueless; and this leads us to a practical suggestion. We hear our teachers telling us that this and that point is undecided; one doubts the efficiency of Salicylic Acid, another of cold bathing, a third disbelieves in most things. Why does this indecision exist? or rather, why does it yearly increase, as each year more and more half digested and crude ideas are hurled into the world? Is it not from this very neglect of statistics? Could not the cases of Guy's Hospital for instance each year be

made to settle, some one point? and, if so, what would be the result, if each Hospital in London tried to settle some point? At a Hospital statistics could be collected of extreme value; for, backed by the names of the leading men in the profession, they might be made to constitute a court of final appeal. It will of course be asked who is to collect them. The staff of a Hospital are too busy, the students are too ignorant. When, however, we look at such arrangements as we have at Guy's; with the Clinicals, Dressers, and Ward Clerks; we fail to see the difficulty. Could not they be made to do the drudgery, while the staff gave the knowledge? We believe that most students would be pleased, as well as willing, to give their work at any time to assist their teachers; and we have often wondered why their services are not more systematically used. It is because everything is done by most of the leading men in the profession, in an unsystematic and isolated manner, that so many points about medicine and treatment are undecided. Until this is altered, statistics will too often continue, as now, to be cooked, for the purpose of gratifying the palate of their author, and illustrating his favourite crotchet.

THE PHYSICAL SOCIETY.

Eight Meeting, Jan. 25th, Mr. Rake in the Chair.

A paper was read by Mr. George J. Wilson on "Erysipelas," of which the following is an extract:—

The comparative neglect of this subject in the medical literature of the present day is due to two sets of causes: the diminished frequency and virulence of its attacks, and the fact of its being a stumbling block in the way of the modern theorizing spirit of science. The pathologist contemptously ignores it because it has no connection with either tubercle or sclerosis.

Erysipelas probably a contagious specific fever due to the entrance into the system of a certain definite germ. States of the health and atmosphere cannot therefore produce the disease. To say, as is said in some much read books on Surgery, that bad hygienic or broken health produces Erysipelas, is either misuse of terms or an advocation of spontaneous generation. It is to be hoped that it is the former, and that Mr. Erichsen does not believe in Dr. Bastian's creative urine which said "Let there be Bacteria" and behold on the third or fourth day it was putrid.

Erysipelas never Idiopathic, there being always an abrasion, through which the germs of the disease obtain entrance into the system. The so-called non-Traumatic cases being due to errors of observation or diagnosis. Herpes, an exceedingly frequent starting point of the disease, and often over looked. The swelling and redness of the forehead after eating shell fish, not a true Erysipelas (these cases should on Homœopathic principles be treated with infinitesimal doses of lobster-salad). The insignificance of the wound and the prejudices of the patient make it difficult to obtain a correct history. [Out of the very few cases brought forward on the night of debate as Idiopathic, one turns out to be really traumatic]. The different kinds of Erysipelas next dealt with, and their relation to and difference from exanthematous fevers pointed out. The danger of Erysipelas occurring in patients with organic disease, instanced. In regard to treatment, objections to be expected from two sets of opponents; the theorizing argumentative man, who, in the full pride of his acquaintance with Foster's Physiology, wishes to find an exact explanation for everything; and the therapeutical sceptic, the "Doubting Thomas" of Medicine, the man who seems to have taken a brief from flavoured water to defend its cause against all inovating remedies. The two however come into collision, as in the battle of the Kilkenny cats, there remain but little residuary tails of truth. Constitutional treatment more valuable than local. The so-called anti-phlogistic treatment always harmful, in a disease, the chief danger of which arises from exhaustion. A good mercurial purge at the outset, followed by large doses of the Perchloride of Iron, a nourishing diet, the best treatment. As to local measures, painting with nitrate of silver, &c., reminds one of the practice of the ostrich which hides its head in the sand when pursued by its enemies; it certainly abolishes the blush, but the disease jogs on unchecked. The German plan of subcutaneouly injecting carbolic acid around the margins of the affected surface, turning it into a sort of "meated grange," of doubtful success, flour and cotton-wool the best applications, punctures of little use but several short incisions preferable to one long cut.

The Pathology of the disease and its intimate connection with the lymphatic system dealt with at length.

The appearance of dogmatism in part of the paper excused on the ground that it excites opposition, and hence is useful for debate. In regard to papers for discussion, there should be a sort of Athenian law, inflicting penalties on those who would not belong to one party or the other. The best apology for omissions, we hope that they may be ably supplied in the course of the debate.

Mr. R. SCOTT, in the absence of Mr. STEELE, opened the debate. He considered erysipelas a local disease because one attack predisposed to another. He thought also it could arise from cold. He gave the recent news of the white corpuscles causing the delirium by a plugging of the cerebral arterioles. Was cold or heat the best treatment?

Mr. ALFRED SCOTT wished a well marked distinction to be drawn between the predisposing and the exciting cause of erysipelas, cold and dark belonging to the former class. He mentioned an interesting case of erysipelatous inflammation which was then in Dorcas ward.

Mr. SKELSWELL thought acute Eczema might be confounded with erysipelas.

Mr. MACKERN argued in support of Idicpathic Erysipelas, and gave a case which had been admitted as one of gout, and which he considered supported his views.

Mr. W. H. WHITE said that the opinions about erysipelas might be divided into two classes. First, those that considered it a single inflammatory disease allied to pneumonia; and second, those that considered it specific. He thought the latter the correct view, as the disease was both contagious and infectious. The specific nature of the disease was probably due to a germ, but might be due to a chemical compound.

Mr. MORSE detailed cases of his own experience which showed very well the contagiousness of erysipelas, also its close connection with pyæmia.

Mr. E. A. STARLING objected to Mr. Wilson's suggestion that herpes was a lymphatic disease, for if it were how could the previous pain be accounted for. He objected to Mr. Stone's classification on the ground that if a disease were idiopathic it could not be specific.

Mr. WILSON then replied, and after a vote of thanks to the reader of the paper, the meeting adjourned.

HISTORICAL MEDICINE.

In these days of extended experimental research and excessive publication, when our journals overflow with records of fresh observations and reviews of new books, it may seem almost a sarcasm to recommend the study of historical medicine. Doubtless most of us read with more or less interest the latest specific tried for epilepsy, or the most recent operation for rickets; but how few of us reverse the order of things and travel back a few years in the history of our profession. True, the well worn adage, "Ars longa vita brevis," will always obtain, and a glance round a medical library of ordinary pretensions, or into such nomenclatures as may be found in Murchison's "Continued Fevers" only serves to impress us with its reality; nevertheless, without becoming very profound medical historians, we may greatly enhance the interest of our reading by an occasional half-hour with the "old masters" of medicine and surgery.

I do not for a moment wish to over-rate the value of such knowledge, as compared with accurate observation, careful diagnosis and effectual treatment which are without doubt the three chief qualities to be looked for in a medical man; and indeed the words of the Laureate are very true:

"Knowledge comes, but wisdom lingers, and I stand
upon the shore,
And the individual withers, and the world is more and
more."

Knowledge and wisdom are certainly very distinct things, but I wish to show that historical knowledge in medicine may lead to an increase of medical wisdom.

Dr. Wilks says, that we cannot thoroughly understand a discovery till we know its history; and he ably illustrates this by the case of the stethoscope. I was especially impressed with this illustration, as I had, until a comparatively short time before hearing his lectures, looked upon the central perforation as a most essential part in its construction. But when we read the account given by Laennec of its discovery, how much easier is it to shake off the feeling of awe with which as first year's men we perhaps regarded it, and to look upon it as a simple conductor of sound requiring no great manipulation.

Again, to take a surgical case; how interesting it is to read through the long lists of methods for treating aneurism. Certainly we are still in many cases lamentably helpless, but yet the record of the doings of eminent physicians and surgeons who have gone before ought not only to show us how much has failed, but also how much yet remains to be thought of and tried.

If the catalogue of failures in the treatment of the above affection, or of most nervous diseases be somewhat disheartening, a few minutes study of the plates in any old manual of surgery or anatomy ought to be reassuring. Here we may make mental comparisons between a barbarous looking instrument, which reminds us more of a primitive tracheotomy tube, than anything else, and a Southey's trocar. And yet we are told that they both have had the same destination. Or we see a man lying on his side and submitting with the greatest apparent complacency to an operation performed on the other side of his head with an instrument uncommonly like a carpenter's centre bit; how different from trephining under choloform now-a-days! An anatomical book of about the same date will present a series of drawings in which the unhappy victims are standing in the most dramatic positions, with varied expressions of content or the reverse on their faces, all the while suffering from elaborate dissections of the muscles of a leg or arm or perhaps half the trunk. Such pictures remind us of the Abyssinian who are said to carve their steaks daily from living cattle, in defiance of anti-vivisectionists and legislation. When we turn from these emotional but inaccurate portraits to Branue or Ellis, I think we may admit that anatomy has not been altogether stationary.

The same remarks apply with even greater force to physiology, the necessary basis of all modern medicine. How much amusement and instruction may be gained from such a book as that in which Boyle describes his experiments and views on the spirits of the blood. We learn how he squeezed lemon-juice into blood; how noxious gases and vapours came off in consequence; and many other experiments which may seem absurd in these enlightened times, but were then accounted solemn facts; for Boyle was a great man, a Fellow of the Royal Society, besides being, as his epitaph informs us, "the father of chemistry, and nephew of the Earl of Cork." Indeed his name has been perpetuated in that hardly contested prize "Boyle and Mariotte's Law."

In embryology it is equally interesting to read the curious notions which have sprung up and exploded from the days of the great observer Aristotle to the present time. We meet with fresh observers cropping up at intervals and propounding new theories, many indeed far fetched and distant from the truth but all working in the right direction till it fell to the lot of Wolff to lay the true foundation of our present knowledge of development, now annually increased. The importance of this knowledge not only in gynæcology, but also in the elucidation of congenital deformities, no one will gainsay.

These few examples will, I hope, illustrate in some

slight measure the great interest which is attached to the study of historical medicine, in which term I include surgery and the different branches of medicine. Such examples might be multiplied indefinately, but the above are enough for the present purpose, and time and space are moreover limited.

But it may be asked, To what does all this tend? Perhaps not to pounds, shillings and pence, perhaps not to examinations, but yet though it may lack these (to many) all important objects, it has this sterling worth, that it helps us to appreciate more exactly our true position in the noble art of medicine, and thus renders us more thoughtful members of the highest profession.

I have been led to make these remarks, by the fact, which I have noticed at the Physical Society, that when an essayist ventures in his paper to give a short history of the subject under consideration, he is immediately assailed by a series of tirades against the time wasted on such, at first sight, irrelevant topics. But I think if such critics, when exhausted by poring over Holmes or Bristowe would try a little mental refreshment in the shape of historical medicine, they would return with still greater zest to the somwhat monstrous routine of untold pages of small print.

BEAVEN RAKE.

INTERESTING MEDICAL CASES.

PHILIP.

No. 9.—*Tubercular Pleurisy and Tubercular Peritonitis.*

J. C., æt. 28, admitted January 20th, 1879; works in Spratt's biscuit manufactory; often fourteen or sixteen hours out of the twenty-four. Family history, free from Phthisis. Has not had syphilis and is temperate. Three weeks diarrhœa with severe abdominal pains. A week pains in chest and cough. Wasting. Has physical signs of fluid at both bases, with a loud rub at right base and similar one under left nipple. Abdomen extended and tympanitic. On admission, no evidence of fluid in the abdomen, but since then fluid has appeared, and a day or two ago a hard mass was felt for the first time on the left side of abdomen. It is interesting in this case to note that a loud pleuritic rub is heard when complete dulness shows the presence of fluid, which was farther demonstrated by withdrawing some by the subcutaneous injection syringe. The temperature has varied, generally about 90° in the moring and 101° or 102° in the evening.

No. 16.—*Syphilitic affection of nerves of right arm and left leg.*

W. W., æt. 34, admitted January 10th, 1879; a sailor. Chancre twelve years ago, but had no sore throat or rash. Within the last month or two rapid wasting of muscles of right arm (not of fore arm) and of left leg and thigh, accompanied by swelling and pain of the shoulder, elbow, and knee, especially the latter, which has become much distended by fluid. Cannot use right arm at all nor stand on the leg. Much pain in the joints, especially at night. At first treated with mercury without any good effect. Ten grain doses of Iodide of Potassium were then administered, and within the next forty-eight hours he had lost most of the pain. He has improved since so rapidly that he is now up and about and able to use the arm. The muscles are regaining tone and bulk.

No. 17.—*Paroxysmal Hæmatinuria.*

H. W. R., æt. 19, admitted January 28th, 1879; a tea packer. No history of Ague or Rheumatism. Used to suffer from Epistaxis. For last three winters, whenever he is exposed to cold begins to shiver and his fingers get blue and numb. He does not get warm again unless he can reach a fire. He sometimes sweats a little after the attack. The next urine passed is of a dark porter colour. Has no attacks in summer time. Very anæmic. No blood or albumen in the urine. Spleen apparently enlarged. Diminished number of red blood cells. Has had one attack since admission, but the urine was accidentally thrown away, and so was not examined.

No. 18.—*Acute Nephritis after Scarlatina complicated by Acute Pleurisy.*

W. S., æt. 23, admitted January 17th, 1879. Came in with a history of seven day diarrhœa and five days vomiting, accompanied by some pain in the right side. The attack come on suddenly with chilliness. On admission, very anæmic, physical signs of pleuritic effusion on right side. A little albumen in urine. Herpes on upper lip. On the 24th much blood appeared in the urine which was found to contain a few cellular casts. The blood and much albumen have continued ever since, though diminishing at the present time. About the same time as the blood appeared in the urine it was discovered that his hands and fore arms were scaling, which made it very probable that he had suffered from an attack of Scarlatina without being aware of the fact (he only confesses to a slight sore throat). It is peculiar that the clinical features of the case come to the surface in the reverse order of their probable occurrence. His temperature has varied between normal and 101° or 102°.

No.22 (In Tent).—*Malignant disease involving Larynx. Tracheotomy.*

R. B., æt. 52, carpenter, admitted January 23rd, 1879. Noticed swelling in neck eight weeks ago, which has become harder and larger since. Loss of voice four weeks. Difficulty of swallowing commenced about the same time and has increased since. Losing flesh. No pain. Patient is wasted, has a hard swelling on right side of neck just beneath angle of

lower jaw, skin movable over it. Dysphagia and some dyspnœa. Laryngoscope shows a small patch of ulceration at base of epiglottis and œdema of right false vocal cord. The dyspnœa increased, and on the evening of February 6th became very distressing. He had been hawking up a great deal of bloody mucus. On February 7th the House-Surgeon performed Tracheotomy with immediate relief to the patient, who has done well ever since. The expectoration of bloody mucus has ceased since the operation.

No. 23.—*Grangrene of Lung. (?)*

W. V., æt. 35, carpenter, admitted February 5th, 1879. An aunt has died of Phthisis. Twelve months ago was suddenly attacked with severe pains in right side and short breath, and apparently then suffered from an ordinary attack of acute pleurisy. He got better, but never quite recovered; and about six months since sweatings and shiverings commenced off and on for four months. All the twelve months has had a cough, and for the last three months the expectoration has been blood-stained. Has noticed his breath offensive for six months. Much wasting lately. Has kept on work all the time. On admission, the most noticeable fact is the extreme offensiveness of the breath. Cough. Expectoration of offensive blood-stained mucus. Some bulging at right base with dulness and absence of breath sounds. No moist sounds in lung. The dulness on right side reaches as high as the spine of scapula behind, and the fourth rib in front. The breath sounds are deficient all over the right side. Probable cause of case—acute pleurisy, followed by empyema, which has burst into lung.

No. 31.—*Calculus Pyelitis.*

A. T., æt. 28, admitted January 30th, 1879. Strong family history of Phthitis. Four months ago, after a hard day's work, passed some blood in his urine and continued to do so until a week or two ago. At first there was no pus, but after a time the urine was very thick as well as containing blood. Two months ago a swelling about as large as an egg formed in the left lumbar region. This "burst inwardly," and he passed at the time a large quantity of pus with the urine. Left lumbar region in front and behind dull on percussion and full. The muscles are kept contracted and the patient complains of much tenderness on pressure. Fluctuation can be detected from front to back. Signs of pleuritic effusion at left base of lung. Some suspicious signs at right apex. Temperature various between normal and 103°. Feb. 8th, Mr. Jacobson withdrew six ounces of greenish pus by means of a small trocar and cannula. It is proposed to lay the abscess freely open. The diagnosis lies between tubercular and calculous pyelitis and hydatid. Hydatid is negatived by the clear history of kidney symptons and the absence of any looklets or cysts from the pus withdrawn. A calculous is more probably the cause of the pyelitis than tubercle (not withstanding the family taint) because the first symptoms was passing of blood rather than of pus. But on the other hand, against calculous as a cause, in the absence of renal colic.

No. 34.—*Aneurism of Arch of Aorta.*

J. W., æt. 40. Dyspnœa and cough 14 months. No history of drink or syphilis. Most prominent symptoms:—Sensation of obstruction in œsophagus; shooting and aching pains in both arms; slight difference in radial pulses; husky voice and cough on exertion (Laryngoscopic signs vague, but right vocal cord thought to be more flabbid than left); no difference in eyes; no pulsation; some dulness to right of sternum when first admitted, but this has since disappeared; whiffing diastolic bruit most audible at lower end of sternum. He has been in five months with very little change of symptoms. It is peculiar that the well-marked dulness at first present should have disappeared. Heart apex beats three inches below nipple, in nipple line.

No. 43 —*Locomotor Ataxy.*

L. H. æt. 37, admitted January 23rd. Has been a sailor and exposed to every variety of climate. For last seven years has worked at a smelting furnace. A hard drinker. Two years ago first noticed that he could not walk straight in the dark; he then began to be unsteady in daylight and his gait has been becoming worse ever since. Has had no shooting pains and no affection of sight. His gait is typically ataxic. He has a double aortic and a systolic mitral bruit Cannot relax sphincter ani and sphincter vesicæ at same time. Arms not affected.

No. 47.—*Pleuro-pneumonia followed by Empyema.*

R. C., æt. 40, admitted Dec. 25th.—Farm labourer. When admitted pleuro-pneumonia at right base. This spread through the lung. The apex rapidly cleared up, and during the clearing the auscultatory signs were very like those of a vomica. But the fluid at the base remained for a long time, and then the patient began to sweat at night and had a return of high temperature. Puncture with a subcutaneous injection syringe showed that there was pus in the pleura. However, since then he has got better, and though the signs of fluid are still present they are less evident, so that it may be presumed that the pus is being absorbed.

BRIGHT.

No. 2.

A. W., æt. 8.—This is a case of heart disease, and secondary kidney affection, which has been in the Hospital for some months. But the interest of the case at present is centered in the fact that a week or two ago her face (particularly on the left side) and the

left arm and hand swelled up tremendously, and for a time it was doubtful what was the cause of such sudden œdema. It went down in two or three days and with its subsidence a network of veins was seen developing on the chest which has remained ever since. It is probable therefore, that some plugging of the left innominate vein occurred, possibly brought on by the stagnant condition of the circulation due to the heart disease. The child suffers but little inconvenience and looks none the worse for this sudden change of circulation.

No. 5.—*Apex Pneumonia.*

A. B., æt. 10, admitted Jan. 8th—Phthisis in family. Hooping cough four years ago since which time has been delicate and suffered from cough. Getting thinner, this being partly due to want of sufficient food. On admission, there was a little deficiency of resonance and movement at the left apex, and a few Bronchitic signs all over chest. Two weeks after admission complete dulness with Bronchopony and tubular breathing was found at the left apex. These signs disappeared on the next day but one, but again, a day or two after the dulness re-appeared with absence of breath sounds and no increase of vocal resonance. Puncture with subcutaneous syringe did not withdraw any fluid. The case is interesting from the sudden appearance, disappearance and re-appearance of the abnormal signs at the left apex.

No. 6.—*Cancer of Liver : Malignant ovarian cyst : Peritonitis.*

R. H., æt. 41, servant, admitted Jan. 15th. No cancer in family. Has never drunk much or spirits in the morning. Increasing epigastric pain since last September. About Christmas first noticed swelling of abdomen, and about the same time had pain in hepatic region and became jaundiced. On admission, much jaundiced; ovarian tumour in right inguinal region; enlarged nodular and stony hard liver; no fluid in peritoneal cavity. The cyst was tapped and blood stained fluid evacuated. The fact that the fluid was blood stained made it probable that the ovarian tnmour was malignant. Lately the jaundice has become deeper and the patient has become more cachetic. Has complained much of pain in the abdomen, and fluid has been rapidly effused into the peritoneal cavity.

EXAMINATION NEWS.

UNIVERSITY OF CAMBRIDGE.

M.D. Degree, D. W. C. Hood.

ROYAL COLLEGE OF PHYSICIANS, LONDON.

The following Guy's men were admitted member on January 30th.

D. W. C. Hood, M.D. Cantab. R. E. Carrington, M.B. Lond.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The following have passed the recent primary examination

H. B. Hawksworth, C. C. Brodwick, B. R. A. Taylor, S. A. Davies, A. T. Perkins, J. F. Spong, G. F. Dixon, G. W. Mullis, T. B. Luscombe, T. M. Day, J. E. Anderton, S. T. M. Evans, L. Stokes, W. Spong, F. V. Duckworth and A. Bolton.

The following have been admitted as members of the College:—

F. F. Jones, L.S.A.; G. H. Russell, E. J. Morley, L.R.C P., Lond.; H. Elliott, R. W. White, W. W. Collington, L.R.C.P., Edin.; H. Dismorr, L.S.A.; E. Roper. J. T. Morrison, and T. Fuller.

Questions given at the recent final examination for the membership of the College of Surgeons.

SURGICAL ANATOMY AND SURGERY.

1.—Enumerate in their relative position, the viscera and blood vessels contained in the upper zone of the abdomen, *i.e.*, between the diaphragm and a horizontal line, drawn across the cartilages of the ninth ribs. Describe any surgical operations which may be performed in this region.

2.—Mention in their order, the structures divided in performing "Syme's amputation."

3.—Contrast the symptoms and the conditions of the limb which result from sudden plugging of its main artery, with those which result from plugging of its main vein. State the treatment in each case.

4.—Describe the consequences, immediate and remote, of a puncture of the Brachial artery during venesection, and the appropriate treatment.

5.—What consequences are likely to ensue from the impaction of a fragment of Iron, say from an anvil, in the cornea? How would you treat such a case?

6.—What are the signs and symptoms of a loose cartilage in the knee joint? Explain the origin of these bodies, and the treatment you would adapt.

MEDICINE.

1.—How are the lesions of the various cardiac orifices detected and diagnosed? Where, in the different cases, are abnormal sounds heard; and what the pathological conditions that induce them?

2.—Enumerate the various modes by which lead may be introduced into the system, and what symptoms it gives rise to. What is the prophylactic and medicinal treatment?

3.—Enumerate the various metallic and vegetable substances contained in the Pharmacopœia that are employed as evacuants of the alimentary canal. Describe their modus operandi and the particular indications for their employment; and write a prescription in full of a diuretic mixture for an adult.

INDIAN MEDICAL SERVICE.

At the Final Netley examination, C. G. W. Lowdell, obtained eighth place with 2,464 marks.

FOOTBALL NEWS.

On account of the hard state of the ground during the last few weeks, the following matches have been put off:—

Kensington *v.* Flamingoes; Walthamstow *v.* St. Andrew's; Rovers *v.* Gipsies.

INTER-HOSPITAL CHALLENGE CUP.

The ties for the above will be played on the Clapham Rovers ground, Wandsworth Common, as under—

February 10th.—King's *v.* London.
" 11th.—St. Bartholomew's *v.* Charing Cross
" 12th.—*University v.* Middlesex.
" 13th.—St. Thomas's *v.* St. George's.
" 14th.—Guy's *v.* St. Mary's.

GUY'S *v.* CLAPHAM ROVERS.

This match was played at Wandsworth, on Saturday the 8th February, the ground being in capital condition. For the first half of the game the play was very even, nothing worthy of note taking place, but the latter part showed wonderful style on both sides, as each man warmed to his work.

The home team, with the wind in their favour, were able to benefit by drop kicking which they took advantage of at every opportunity. Soon after half time Curle, following up a smart piece of dribbling by Hoggs, took the ball behind the Hospital goal, and Biggs was successful in scoring a goal.

A second try was obtained after a maul in goal by Riggs, and a third by Curle, neither of these however resulted in a goal.

The game thus ended in favour of the Rovers, by one goal and two tries to nothing on the part of the Hospital.

Sides, *Guy's*—C. Spong and J. B. Howell (backs); H. Blatherwick and Dixon (¾ backs); Q. R. Veitch and T. W. J. Long (½ backs); J. H. Lister, J. J. Boswell, A. A. Jeyes, R. Browne, L. A. Dunn, Salvage, R. Cuff, Hunt and Penfold (forwards).

Rovers.—Birkett and Lidyott (backs); Styles and Jennings (¾ backs); Warner and Hogg (½ backs); Reale, Curle, Biggs, Pine, Winrick, Kollier, Whatley, Newman and Turner (forwards).

At a Committee meeting, held in the House Surgeon's room on Monday, February 10th, the following were elected to play against St. Mary's on the 14th prox.

H. Blatherwick, J. B. Howell (backs); T. Shepperd, L. Stokes (¾ backs); A. H. Jackson, Q. R. Veitch (½ backs); J. J. Boswell, R. Browne, R. Cuff, L. A. Dunn, J. A. Fraser, W. Growse, A. A. Jeyes, J. H. Lister (Captain), Salvage (forwards); Dixon, Long, Atkinson, Hurst (reserves).

The second round of cup ties will be played on the 17th, and 18th, or 18th and 19th of February.

The third round on the 24th of February, and the final on 29th of February.

The Presidents of the Physical Society acknowledge Subscriptions to the *Gazette* from the following gentlemen:—

G. H. Parry.	Hugh Bennett.
Dr. Stevenson.	W. H. Roots.
H. A. Collins.	Clement Palmer.
F. Blaker.	St. Clair B. Shadwell.
H. C. Strover.	John Brett.
W. H. Jalland.	Dr. Bond.
Dr. Gillingham.	Dr. Beally.
T. Aspinall.	E. S. Robson.
C. Lewis.	Charles Saunders.
W. J. Tyson.	T. G. Larkin.

Many of the Subscriptions for this year are still unpaid. We shall be glad if subscribers will pay before the next issue.

THE classified list of the recent Matriculation Examination at the London University is worthy of comment. It will be remembered that this examination is the first since the passing of the regulations for admitting women to all degrees of the University. Of *Nine* women who passed, out of *Eleven* who presented themselves, in a total of 568 candidates, one was marked for the second and another for the the third scholarship, but were disqualified by age, and two others obtained marks qualifying for a prize. Six were placed in the honours division.

STATISTICAL REPORT OF GUY'S LYING-IN CHARITY FOR DECEMBER, 1878.

Number of women attended				227
No death.				
Of these there were in their	1st	confinement	28	
,, ,,	2nd	,,	34	
,, ,,	3rd	,,	36	
,, ,,	4th	,,	29	
,, ,,	5th	,,	26	
,, ,,	6th	,,	13	
,, ,,	7th	,,	15	
,, ,,	8th	,,	21	
,, ,,	9th	,,	6	
,, ,,	10th	,,	8	
,, ,,	11th	,,	5	
,, ,,	12th	,,	1	
,, ,,	13th	,,	2	
,, ,,	14th	,,	1	
,, ,,	15th	,,	1	
,, ,,	16th	,,	1	
Number of children born				227
Number of full time children				223
Males alive			99	
Females ,,			122	
Females dead			2	
Number of premature children				4
Females dead			2	
Males dead			2	
Presentations:—				
Vertex			223	
Breech			3	
Footling			1	
				227
Operations:—				
Low Forceps			1	
Externs attended:—				
Mr. J. J. Boswell			65	
Mr. B. N. Rake			64	
Mr. F. R. Atkinson			49	
Mr. F. Bayes			49	
				227

E. B. GRANGER, M.R.C.S., L.R.C.P., Lond.
Junior in Charity for December, 1878.

NOTES OF THE MONTH.

ON DUTY FOR JANUARY.

House Physicians—G. Mackern, J. C. Uhthoff.
Junior House Physician—H. Davy.
House Surgeons—C. Knox-Shaw, R. J. Wainewright.
Junior House Surgeon—J. Meek.
Senior Resident Obstetric—E. J. Morley.
Junior Resident Obstetric—C. Wood.

RESIDENT DRESSERS.

February 1st.—Mr. Briscoe (Mr. Bryant).
,, 8th.—Mr. Morgan (Mr. Durham).
,, 12th.—Mr. T. B. Cross (Mr. Howse).
,, 19th.—Mr. Oram (Mr. Cooper-Forster).
,, 26th.—Mr. Alexander (Mr. Bryant).

APPOINTMENTS.

T. F. J. Blaker, M.R.C.S.E., L.S.A.L., has been appointed Honorary Surgeon to the Brighton and Hove Lying-in-Institution, Hospital, and Dispensary for the diseases of women and children.

GUY'S HOSPITAL GAZETTE,
MARCH, 1879.

ABSTRACT OF

CLINICAL LECTURE ON A CASE OF PERITONITIS.

By Dr. W. Moxon.

Thos. Moss, æt. 18, admitted into Clinical Ward under Dr. Moxon, February 21st, 1879.

REPORT OF CASE.

Previous History.—Had measles when young, no other complaint that he can remember. Enjoyed very good health previous to this attack.

Present attack.—On Saturday night (Feb. 15th) he had tea at 7 o'clock, taking hot bacon, cold pickle cabbage (home made) and tea. About half-an-hour after he went and had a glass of ale with a comrade (who at present it may be mentioned is perfectly well). Shortly after taking this, while standing at the stable door, he was suddenly seized with griping pains in the abdomen. He went home and got into bed and shortly afterwards had to go to stool when he was also seized with vomiting. Since then until admission (a period of 6 days) he has been confined to his bed with continuous vomiting, diarrhœa and paroxysmal colicky pains.

General appearance.—He is a well-made rather thin lad, skin moist not hot. His cheeks are flushed, eyes drowsy, sunken and very dark below the lower lids, expression anxious. He usually lies on his back with knees and thighs bent, but at times is restless, turning from one side to the other and groaning with pain. His abdomen is very rigid and tense, not much distended but tympanitic and extremely painful to the touch. It gives him great pain to raise himself.

Lungs, normal; Respiration solely thoracic. Slight cough which gives him great pain.

Circulatory System.—Heart, normal; Pulse, moderately full and compressible, 88.

Alimentary System.—Incessant diarrhœa with limpid yellowish-green stools, no mucus or blood. Vomits frequently a similar colored material which he says tastes sour and bitter (it is inoffensive).

M.T., 99·8°; E.T., 98·6°; Pulse, 110. Ordered, Morp. inj. ⅓ gr. statim, rept. t.d.s. Wet compress to abdomen. Iced milk.

March 22nd.—Vomiting and diarrhœa still continue as do the colicky pains. Abdomen remains retracted and excessively tender to touch. Ordered, Pil. opii. gr. 1 stat., rept. si. opus. sit. Warm fomentations instead of wet compresses. M.T., 98·6; P., 88.

March 23.—Excessive vomiting of an inoffensive yellowish-green fluid. Bowels have not been open for some hours. Cries out every now and then with pain. Evening.—Condition continues the same; bowels have not been open during the day. Poultices instead of warm fomentations to abdomen. T., 97°; Pulse, 96.

March 24th.—Face appears much more wan, drawn and anxious. Abdomen is excessively painful and more distended. Paroxysms of pain continue unabated in frequency and severity. Bowels remain unopened, but vomiting an inoffensive greenish fluid persists. P., 92 full; T., 97°.

March 25.—Boy appears much worse this morning: his breathing is slow and gasping, tongue dryish and furred, lips parched, pupils contracted, is very drowsy. He appears fully under the influence of opium, but still continues to cry out for relief. Bowels remain unopened, vomiting less, abdomen more distended and highly tympanitic. P., 84, not so full; T., 97·2°. With the object of drawing off some flatus a tube was inserted into the rectum, but was ineffectual, as it could not be introduced beyond an inch or two. In introducing the finger to find the cause of obstruction, the bowel was felt to be compressed from before backwards, as if there was a mass of something causing the anterior wall of the rectum to bulge backwards.

March 26th.—Feels in less pain, but face is still more wan, wasted and anxious. Lips and tongue parched. Complains of great thirst. Vomits a very little, and that brownish and very fœtid (fæcal). Bowels remain unopened. Afternoon.—A small trochar and canula was introduced into the left Iliac region, and about six ounces of most fœtid pus came away with frequent bubbles of air. The boy said he felt slightly relieved. Evening, 8 p.m.—Mr. Howse commenced an operation for washing out the peritoneal cavity, but the boy died before anything much was done. The small incision which was made in the median line allowed the escape of a very large quantity of the same fœtid pus and gas.

Post-Mortem.—On opening the abdomen the omentum was found adherent to the intestine beneath and the coils themselves, distended with flatus, and united together by a quantity of lymph. At the lower part of the hypogastric region a quantity of most fœtid limpid pus welled from a circumscribed space, and on attempting to remove the intestines from the abdominal cavity, the vermiform appendix was found strongly adherent along the brim of the pelvis. The bowel completely removed, left the pelvic cavity lined with a thick layer of coagulated lymph, and containing a large quantity of pus. The mucous surface of the bowel was congested at parts; the vermiform appendix was livid and enlarged, its coats soft and easily lacerated. On slitting up the appendix, it was found to contain two rather hard concretions of fæcal matter, each a little larger than a cherry stone, and beneath one was a perforation large enough to admit a good sized probe.

Clinical abstract.—In lecturing upon the above case, Dr. Moxon commenced by observing:—If you were called to a case of severe abdominal trouble—great pain, vomiting, and perhaps diarrhœa—so severe as to

make a person take to his bed, what should you do? Probably you would give him a purge. Why? Because: firstly, the best books advise you to do so; secondly, the feelings and wishes of your patient would be an inducement; and thirdly, you would sooner then satisfy yourself as to what was really the matter. If obstruction exist, the misery produced by a purge would at once indicate this. Probably, however, a purge will have been already given before you see the patient, which will save you the trouble. For the good of the patient, however, do not treat him in this way—do not purge, give a carminative mixture and bide events. Suppose there is fæcal accumulation, and that instead of purging, the pills are kept in their box and the castor oil in its bottle, will harm ensue? No; no patient ever died owing to the contents of the alimentary canal, for want of an attempt on the part of that canal to drive them out; the danger is on the contrary, that they will push too hard, and perhaps growing angry at their failure burst themselves and cause the contents to pass through the opening produced. Is there no such thing as fæcal obstruction? Only in old gentlmen, those old gentlemen being very sluggish old gentlemen, and those very sluggish old gentlemen being very self-indulgent sluggish old gentlemen. In such a case fæcal obstruction may occur, and the rectum may then be found to contain a pound weight of fæcal matter, perhaps ulcerating the bowel and ending in peritonitis. This, however, is not applicable to young bowel. Never will a young patient die from want of labour on the part of the bowel.

Cancer of the sigmoid flexure causes patients to purge themselves. Why? Because otherwise their bowels become confined, they suffer from pain, and a purge by softening the contents of the bowel allows it to pass through the stricture before the bowel begins itself to act in a too energetic and painful manner. Opium should be given rather than purgatives, this acting as a sedative, and quieting the alimentary canal allows the gall stone or other obstructive body to be slowly passed on.

Dr. Moxon then exhibited two specimens, one a large gall stone from a patient who had signs of obstruction but to whom opium had been solely administered, he completely recovered; the other a preparation in spirit of a portion of the bowel obstructed by gall stone in which the patient had been erroneously treated by purgatives. Both these cases came under his observation about the same time; the former patient under the treatment of an Old Guy's Man, the latter by one who was not an Old Guy's Man. If several days have passed and under carminatives no severe symptoms have been set up there is evidently no obstruction, and then give a purge if you like. Dr. Bristowe says:—"It is generally advisable to commence the treatment with the administration, either by the mouth or rectum, of moderately powerful purgatives, and to persist in this treatment until by their failure to act and by their causing vomiting, and painful but fruitless peristaltic movements their inefficiency is distinctly shown." Such treatment I grieve to see in otherwise so good a book as that of Dr. Bristowe's. There is no danger in biding events, but considerable risk in early active treatment.

I will now read you the report of the case (report partly read).

In this case the boy had been very ill for six days, suffering from diarrhœa and vomiting, but the attitude as he lay in bed with his knees drawn up, the corpse-like appearance (Hippocratic), the thoracic breathing, the tympanitic abdomen, indicated Peritonitis. The thready pulse only exists when the limbs are cold and clammy, the pulse being full earlier in the disease, and the abdomen is not necessarily tender. The symptoms indicated phlegmonous enteritis; the diarrhœa meaning mischief in the mucous layer, and the peritonitis mischief in the serous layer of the intestine. But what was the cause of the Enteritis? None was indicated. I have seen it occur in Lardaceous disease of the intestine, and in Diabetes, but in this case no special cause was detected.

Report continued:—

Nothing had been passed since February 23rd, that is three days before death. Obstruction had occurred, and it would be well now to consider the causes of obstruction. They may be divided as follows—

1.—*Obstruction dependent on the contents of the bowel.*

Gall stone. Intestinal concretions. Worms.

In such cases the obstruction would be complete, so that the preceding diarrhœa in the above case disproved their existence as a cause.

2.—*Obstruction dependent on causes external to the bowel or strangulation from without.*

(*a*) Pressure by adhesion bands, usually a diverticulum from the ileum or cæcal appendix. (*b*) Adhesion of the bowel to bladder, uterus or ovary, but this rather drags than presses and should perhaps be called traction rather than pressure. (*c*) Pressure by abscess, enlarged uterus, tumour, &c. (*d*) Internal hernia—through the mesentery, omentum, &c.

3.—*Obstruction dependent on causes in the wall itself.*

(*a*) Paralysis—as from inflammation. (*b*) Volvulus, or spiral twist. (*c*) Intussusception. (*d*) Disease of the wall, as cancer, ulcer, tumour, &c.

Some of these causes produce immediate and complete obstruction, viz., bands of adhesion, volvulus, internal hernia, intussusception producing a tumour, and bleeding, neither of which existed in the above case, besides which it is very rare except in infants.

When some other causes exist, such as cancer, tumour, or ulcer of the intestinal walls, the obstruction is preceded by discomfort for weeks or months, and if an enlarged uterus or tumour exist pressing on the bowel, there would be evidence of such a tumour.

But two causes of obstruction remain therefore—

paralysis of the bowel and pressure of an abscess. No local dulness pointed to absess, and its existence could not be recognised; the great pain which existed being supposed due to distension. As it was thought, however, that this might be relieved by a puncture, a small trochar and canula were passed through the abdominal wall with the view of puncturing the intestine. The result which I have just read you from the report indicated the existence of suppurative peritonitis and intestinal perforation. Such cases of suppurative peritonitis may lead to discharge of pus from the umbilicus, and if the abscess is localized it should be incised and the cavity washed out.

In the above case there were no symptoms indicating perityphlitis—the pain not being referred to the region of the cæcum—nor was there fulness in that region, nor constipation. The obstruction was probably partly due to paralysis of the intestinal wall, caused by inflammation, and partly to the pressure of the abscess upon the bowel (this latter being what was felt per rectum).

In conclusion, I think this might be said:—

Sudden *severe* abdominal disease, not proving to be obstructive, will, in young males, probably turn out to be due to perforation of the cæcal appendix.

PART OF A DRESSER'S TAKE IN.

MALIGNANT DISEASE OF BREAST.

Family History, no tumours. *History*, 2 years ago swelling in right breast size of a nut; this gradually increased, March following, 1878, tumour was removed. October last, swelling appeared in left breast about the same size as in other, has been gradually increasing, has had lancivating pains, but no enlarged glands. *Admission*, in left breast there is a swelling size of goose's egg, nipple slightly retracted, a serous fluid can be squeezed from orifices in nipple.

Remarks.—This was an interesting case from the serous discharge, there must evidently be a cyst, the mass itself was very hard, veins were large around breast, no decided diagnosis could be made. Feb. 4th operation, breast removed, a cyst found in a malignant growth. Feb. 10th, breast has almost united by immediate union, there is a little bagging and an incision was made to let it out. Feb. 19th, wound filling up nicely, will be soon healed.

OTHER BREAST CASES.

Of four interesting cases which have lately come under our care in Lydia Ward, No. 1 is just mentioned, No. 2, æt. 40, single, of a very nervous temperament. She gives the history of a violent blow in breast from a child running against her, a small hard lump appeared 2 months after; this growth has been increasing gradually for 10 months. The swelling is hard, irregular and characteristic of carcimona, one gland enlarged. Breast removed Jan. 14th, and now (Feb. 11th) wound is almost well. Case No. 3, æt. 36, married, of a similar temperament, 3 children, 2 cousins had mammary tumours. No history of injury. This case was very similar to the last, and in the same situation, but it was nodular slipped about slightly, still there was a hard feel which made us think of malignancy. There were no glands enlarged, and after removal it was found to be a typical adenoma. Feb. 10th, Patient is almost well, in advance of the previous case, Feb. 14th, left hospital.

No. 4, a healthy woman, æt. 70, married, four children youngest child about thirty, has suckled with breast. *History*, first noticed a small lump 10 years ago, towards axillary portion of breast, which went on increasing, patient says it was not tense till last Friday when it began to discharge blood. *On admission*, Is healthy looking, there is no breast to be recognised on left side, and in its place is an ugly, irregular, cancerous sore, with a breaking down cyst, which was the primary disease; since, the skin adjoining has taken on a cancerous nature.

Remarks.—This was a case of cystic-carcimona, and an exceptional one. If the student were asked what to do, one thing he would say for almost a certainty, would be, not operate for she is a patient æt. 70. On looking at her she gives you a picture of health, is likely to live many more years; the mass is a great nuisance to her, and the skin around is gradually becoming implicated. The operation of removing the whole of mammary region was performed on Jan. 31st by two elleptical incisions the whole of the diseased mass was removed. Feb. 10th, doing exceedingly well, gap is granulating up nicely.

COMMINUTED FRACTURE OF HUMERUS.

E. A., æt. 47, married, admitted, Feb. 2nd, '79. *History*, patient was going out of doors when she took a false step and fell on her left shoulder. The evening following presents herself with a severe bruise over inner side of left arm, cannot move the limb, and on elevating the arm and placing finger over shoulder crepitus is well marked. Feb. 4th, patient's arm is very painful. Feb. 8th, a Stromeyer's cushion was applied which gave patient immediate relief, exclaim-how comfortable it was. March 6th, cushion removed and arm to be carried in a sling. Only slight crepitus in joint.

Remarks, this cushion is an ingenious apparatus, and consists of a triangular pad, apex of which is adapted to axilla, while the base and sides support the arms; straps are applied so as to keep upper arm, forearm, and hand in position. The whole is kept to the side of chest by 3 straps round body. It is easily made and can be used for various other injuries to arm. A specimen of the cushion can been seed in Lydia ward.

MAL-PRACTICE OF STRAPPING TESTICLE.

A man, æt. 34, contracted gonorrhœa, followed soon after by enlarged testicle; he came to the hospital

and had gland strapped, great pain insued in three days so that he had to loosen strapping. On returning to hospital 5 days after the skilful appliance, a sloughing scrotum with a well marked line of demarcation encircling it at neck, was presented to us.

Remarks.—The testicle, if strapped to be of any use, must be done properly, this was a well marked case somewhat exaggerated. In order to keep testicle in its place, the circular piece must be put round pretty tight, and this must inevitably be somewhat risky, impeding the circulation, for how can the blood stream be intact, when there is a ligature round the vessels and if the products of the enlarged gland are to be absorbed, how is this to be accomplished. This is a case from which all of us ought to take a lesson, viz., that strapping the testicle is bad practice.

MALIGNANT PUSTULE.

J. R., æt. 28, married, hide cutter, suffered once before with a sore finger (poisoned). For last 14 days been working among cape goat and sheep hides and skins. About two years ago one of his fellow workmen died of malignant pustule, contracted from similar hides. *Present History.*—On Saturday morning, Feb. 1st, he noticed a small pimple appear on front arm, 4 inches above wrist, alterations were seen in it after a few hours. The place grew large and vesiculated, its edges becoming inflamed and raised, this has increased up till the present. Swelling and aching appeared on Feb. 3rd. He cannot give a history of a prick. *On admission,* there is an intercellular swelling a little larger than a pea, it contains a serous fluid (non-pustular), the forearm up to axilla is much inflamed and a gland or two is involved. Feb. 4th, a circular piece of skin including the tubercle was removed, it extended for about 1 inch all round. Wound was washed out with a solution of Chloride of zinc. No bacteria found in blood or serum of pustule. Feb. 6th, 2nd day after operation, all blush of arm gone. Temperature gradually fallen to normal line. Feb. 13th, left Hospital with a granulating wound.

March 22nd.—The sore has not quite healed.

Remarks.—This affection which is fatal if left to itself, can be cured if taken in time.

FROST BITE CURED BY SNOW.

A. E., æt. 25, drinker, slept out one night in a cart, next morning right foot quite dull, and insensible, and cold. Came to Hospital. The House Surgeon inserted needles into his foot but he failed to feel them, his foot was quite cold. About 6 hours afterwards he was placed in bed and strict orders were given to avoid sudden heat. It was lucky the unfortunate circumstance did not happen 3 or 4 days later for no snow would have been procured, and it was only obtained after some difficulty. This was rubbed into the man's foot for 2 hours. He could at first distinguish nothing except mere touch, after a time he could detect how many fingers were being applied, sensation and warmth gradually appeared, and in three days he was quite well, in 3 more days he left the hospital.

Remarks.—Immediate warmth should never be applied to frost bite. In this case if the dresser had not gone in time to remove a hot bottle, patient would have been a different man.

RUPTURE OF BELLY AT BICEPS HUMERI.

A patient, æt. 23, fell off a cart while driving, picked up and knows nothing what has happened. No history of drink, no previous fits. There is no doubt to this being an epileptic fit. *On Admission,* biceps apparently divided, junction of lower third of belly with middle; there is some slight injury to left thigh. Patient is admitted into accident ward, arm is fixed to chest by a bandage. Is convalescent in a few days and leaves. Ten days afterwards makes his appearance again, and there is a distinct depression, were apparently the muscle has united. The man can move his arm, but of course this will not be allowed for some weeks.

SOME CASES OF GENERAL PARALYSIS OF THE INSANE AND OTHER FORMS OF INSANITY, WITH REMARKS.

By HENRY DAVY, M.B.

We may state that the notes of the cases were taken by Dr. T. S. Sheldon equally with myself that he took all the sphygmographic and tracings to which I refer. Many also of the observations were pointed out by Dr. G. Mickley who also superintended the P.M. examinations.

"When you look at the cases of General Paralysis seen in an asylum," says Dr. Dickson, "you feel certain that you have a very definite disease before you but when you come into a general hospital you see a disease so like it, the element of insanity only being wanting, that you are bound at once to ask yourself whether the cases you saw in the asylum were members of a definite and distinct group or whether they do not belong to the same class of cases as are admitted into general hospitals." These remarks of Dr. Dickson become very forcible when you are dealing with cases like that in 31 Stephen, where you have a man weak in every muscle and with all the features of a general muscular debility, but with no mental delusions. Since then every medical man may have to deal with such cases it may not be uninteresting to the readers of the *Gazette* if I make use of the kind permission given me by the authorities of St. Luke's hospital and publish a few cases of the interesting disease we are considering merely with a view to their clinical features.

General Paralysis has been defined by alienists as "a peculiar mental disorder, with failure of muscular power, first noticeable in a changed expression of face and altered mode of speech—a disease of a definite and short duration, associated with morbid changes of the brain, cord, and membranes." "As regards the mental symptoms," says Dr. Wilks, "they

may show themselves by a mere failure of power: the tendency is towards Denentia the patient will have delusions, and his mind becomes wholly deranged but instead of becoming melancholy he becomes elated and has exalted ideas." We have then a disease characterised by a slow decline in power, both of the patients intellect and muscular system, and if we take this as a broad definition of General Paralysis all cases will come under the title naturally. It is otherwise if we rigidly define any mental state as diagnostic, but perhaps this will be best shewn by at once by passing on to our cases.

CASE I.—R. B., æt. 32, married, occupation a coachman, admitted Nov. 10th, 1877.

Patient is a married man and had one child, was quiet in his habits, fairly educated, good tempered, and sober. His illness was supposed to be caused by a real disturbance of his urinary organs, and by pecuniary trouble. The first symptom noticed was that he became very garrulous (although naturally reserved). He fancied that he had a lot of money which his wife took from him. Wanted to become junior member for Hastings, and thought he could stand for Mr. Brassey. When I saw him a few months after admission his condition was as follows. Patient is a fairly nourished man with a peculiarly vacant expression of countenance owing apparently to loss of power in all the muscles of the face. The skin of the face and particularly of the forehead has a greasy appearance and feel. He walks very feebly, tottering slightly in his gait, and he cannot lift heavy things or use his arms strongly. He speaks slowly with a faint amount of pause or indecision about his words. His emotions are not well under his control, at one time he is hopeful, at another dejected and crying if put out over quite small trifles. His pupils are equal. His writing is characteristic when compared with that written before his illness, the letters composed of shaky strokes, and here and there unnecessarily repeated (hav-ave have). He talks correctly of his life as a coachman, and has no marked delusions, says he has only a little money. He is hopeful about his health and shows elated ideas only in answering "I feel very well indeed." "I am all right in health," when questioned on this point. His tongue trembles but little when protruded.

He went on in much this condition until February, 1878, when he visibly altered for the worse. His face lost even more of its expression, his pupils became unequal, his tongue trembled much when protruded, he lost all interest in everything and did not trouble himself to retain his excretions.

On February 9th we made the following note:—Was obliged to stay in bed this morning as he was not able to stand, speech very slow and hesitating, apparently difficult, he begins to answer the question some seconds after it is put to him. His whole body is tremulous, and at times he has regular twitchings. Pupils are to day equal and contracted.

Feb. 11th.—Could not recognise his wife, and does not answer questions or speak. Seems unwilling to be touched, resists if one attempts to move him, while his arms are convulsed when moved. Is constantly sniffing and is very dirty. He swallows with difficulty.

Feb. 12th.—At 5·30 a.m. was very restless and moaned frequently as if in pain. At 7·30 was respiring deeply and forcible each expiration being a groan. Has passed no urine since 11th, and his bladder was found extending above the umbilicus. About a quart of dirty coloured urine was drawn off by a soft india-rubber catheter a quantity of muco-purulent material running after the urine. After this he appeared relieved. There is apparently some hyperasthesia about the head and face, and some right hemiplegia. He cannot or does not speak. Arms and legs seem rigid and the former contract violently when one attempts to move them. During the day about 12 pints of urine were drawn off by a soft catheter, and this was found early in the day to contain a large quantity of red corpuscles, giving it quite a red tinge, while later on it was merely smoky. The catheter was once nearly choked with thick muco-purulent fluid, and after this had passed more smoky coloured urine passed readily. He lies on his back not recognising anyone and breathes through his nose with a peculiar sniffing noise. The breathing is mostly diaphragmatic, the intercostals hardly acting. The amount of nourishment he took was so small that he was fed with milk, beef tea, eggs and brandy, with a nose tube.

Feb. 13th.—Urine contains much muco-purulent bloody material, but is less in quantity than yesterday. At noon there was a good deal of hiccough and râles muquenx. The respiration was wholly diaphragmatic and now and then interrupted for some seconds, it is still accompanied by the sniffing sound. At midnight he is insensible with contracted but unequal pupils.

Feb. 14th.—At 10 a.m. he was pulseless, respiration very quick and diaphragmatic, no hiccough but there was râle muqueux, otherwise in same condition and at 4·15 p.m. he quietly died.

The following temperatures were observed:—

	Morning.	Evening.
February 9th,	96·8°	98°
„ 10th,	95·4°	98·8°
„ 11th,	96·2°	97·6°
„ 12th,	93°	94·4°
„ 13th,	93·2°	97°

February 14th at noon 102°

We may add that Dr. Sheldon several times took his sphygmographic tracing, but we will remark on this further on.

Post-mortem examination made 20 hours after death.

Brain and Membranes.—In sawing through the Calvarium the Dura-mater was injured in one or two places, and a considerable quantity of straw-coloured fluid escaped. On removing the Dura-mater it was found adherent at one place on the left side to the arachnoid and Pia-mater so that the whole stripped off together, leaving a small portion of the hemispheres bare just posteriorly to the fissure of Rolando. The rest of the membranes were adherent in no place, every piece of them being carefully stripped off by Dr. Sheldon and myself. The arachnoid seemed a little more opaque than usual, but it was not much thickened. Both it and the Pia-mater were very œdematous, although there did not appear to be an excess of fluid in the subarachnoid space. The brain substance appeared very soft especially at the base of the fissure of Sylvius, the grey matter however did not appear much wasted. On making sections through the brain, the vessels in parts appeared stiffened and were slightly drawn out. Spinal cord not examined.

Heart.—Valves extremely thin otherwise normal.

Aorta.—Atheromatous patches of some size scattered about here and there.

Lungs.—Congested, otherwise healthy.

Liver.—Normal.

Bladder.—Distended with urine and very much hypertrophied, the muscular fasciculi standing out prominently on the inner surface. The opening into the urethra, admitted the first phalanx of the middle finger.

Ureters.—Very much dilated and hypertrophied especially on the Left side.

Kidneys.—On both sides were altered in very much the same way the minute abscesses being more developed on the right side. Both were in a condition of suppuration and both shewed old evidence of wasting disease. Their pelves very much distended and large, each containing a dram or two of blood-stained purulent material.

(To be continued.)

GUY'S HOSPITAL GAZETTE,

MARCH, 1879.

IN no department of Medicine has more progress been made during the last half century than in that relating to infectious diseases. From stifling our patients in hot rooms with every poisonous condition concentrated, we allow them 144 square feet of space and keep them in a temperature of 60° F. From believing that the fevers themselves were visitations from God, not to be prevented by anything but prayers or charms, we have gained sure knowledge how infection may be prevented, and have in some cases traced out the source through which it may come. To put this in a concrete form, we are at present for instance, painfully conscious of the fact that the Poison of Diphtheria resides in the sputum and expired air, and although the careful disinfection of these may prevent its spread, experience has shewn that it is not safe to neglect immediate isolation of the cases as they arise. Of Typhus again we know that the poison is rapidly destroyed by admixture with air; but the same experience, which seems to show that the poison is innocuous to a person standing at 9 feet distant from the patient, teaches us that Typhus poison hangs most closely to all the things in contact with that patient, and conclusively demonstrates the folly of attempting to deal with such a disease in wards devoted to ordinary medicine.

As a general rule this increased knowledge has been amply used by the medical profession. Fever hospitals have been built in all directions, whilst some hospitals and large institutions have started isolated wards in which to deal with these infectious cases.

Many hospitals however, and Guy's is one of these, have no such means of isolation, and it is our object now to call attention to the dangers arising from this want, and as far as we can, urge on the authorities the need of finding some remedy. The urgency of doing this is very great and pressing, and unless it is found we feel sure that Guy's will one day be awakened to the need we speak of, by an outburst of public opinion before which it will be bound to yield notwithstanding the fact that it is not dependent for its income on public favour. For, consider the position in which an hospital is, when it is provided with no means of isolating its infectious cases. In every such hospital, if it be at all a large one, cases of infectious diseases must occasionally occur, even though these are not purposely admitted. An accident or some other case after an operation is found to have a specific fever; or even more frequently some obscure case is admitted, in which an infectious disease only shews itself after some days. Now all these cases must be at once removed or must remain as focuses from which the disease will spread to other patients, and although in London, cases such as these, can be removed to the Asylum boards hospitals, even then their removal is a work of hours, when the ordinary routine of getting orders from the relieving officer, &c., has to be gone through; and in these hours the infection may be spread right and left through the nurses and patients.

Further, it is always found, that where there is no accommodation for infectious cases, these will occasionally be retained and treated in the general wards, either from neglect on the part of officials or from the very natural wish not to lose sight altogether of an interesting case. At any rate limited epidemics of more or less gravity are constantly breaking out in hospitals which have no means of immediate isolation, and as many other hospitals besides Guy's are interested in this question we will give a couple of examples which have recently occurred in one of them.—A patient suffering from Diphtheria is admitted into a general ward, several other patients in the ward take it from him, and two die, one of these being a poor lad admitted from the country for some slight skin affection.—Again, a girl is admitted in an obscure feverish condition, and after a short time proves to have Typhus fever; she is nursed in the ward, and in consequence a nurse and a neighbouring patient catch the disease from her. There being no other means of isolating these cases they are placed in a room ordinarily devoted to that dangerously septic operation Ovariotomy, and are nursed by one old woman over 50 who had never previously had the disease.

These examples reflect such credit on the institution at which they occurred that we need not comment on

them. We ask, however, our staff to consider what would be the verdict of the outside world, or even of the profession generally, if such instances came to be heard of. What for instance would be said of them by an article writer in the *Times* or *Telegraph?* The question is worth considering, for however rich or powerful a hospital is, it is not above public opinion, and though it may avoid a public enquiry, it cannot avoid newspaper publicity. It is especially worth considering by the authorities who guide the fortunes of Guy's, for what *has* happened to others *may* happen to us.

The management of Guy's has before now been *deservedly* praised for its *truly economic* management, but we venture to think it will some day be praised in somewhat different terms unless those who have the power alter the state of things to which we have drawn their attention.

PHYSICAL SOCIETY.

Mr. A. Scott in the Chair. Feb. 8th, 1879.

Mr. Morse read a paper on "Nervous influence in Repair," of which the following is an abstract:—

As Repair was so closely dependent on Nutrition the two subjects were considered together under the following headings:—

I. The parts of the nervous system (if there be any special parts) that preside over and conduct such impressions as shall regulate the nutrition of the body.

II. The effect on nutrition of morbid states of the nervous system.

III. The influence of the mind on Nutrition and Repair.

IV. Treatment.

The author, after mentioning several theories which state that, since nutrition goes on quite well in plants and in the lower animals which have no nervous system, therefore the nervous system is not essential to nutrition, shewed that this was no proof that in animals which have a nervous system, nutrition was independent of it.

He then proceeded to speak of each part of the nervous system that was concerned in nutrition, mentioning especially the grey matter of the spinal cord, and illustrating by pathology the way in which various parts of the body waste and refuse to heal when disconnected with their centres.

Experiments were then quoted to prove the existence of "trophic" nerves, one of which was performed on the rabbit shewing that the eye and face are directly dependent for their nutrition on a certain tract of fibres along the inner border of the fifth nerve.

The motor nerves might also be paralysed without any defect in nutrition. These trophic fibres have been said to arise from the ganglia on the posterior roots of the spinal nerves, we know that these ganglia take part in the nutrition of the nerve itself.

The sympathetic may have an indirect influence on nutrition by altering the calibre of the vessels, but propably nutrition is affected as much by sympathetic as by cerebro-spinal nerves.

As illustrations of the second question, viz., The influence of morbid conditions on the Nervous System, several cases from "Rest and Pain" were brought forward shewing the effect of an exposed nerve in a wound as in the case of an irritable ulcer, and also of pressure upon or irritation of a nerve by morbid growths.

Shewing the influence of the mind, a case of ununited fracture in this hospital was mentioned as a probable example, and especially four cases of simple fracture that occurred in patients who were in a railway collision near Norwich, in September, 1874. In three of these cases repair was remarkably slow, and in the fourth during the seven weeks that she lived it did not take place at all, as was shewn by the P.M. examination.

As to treatment, were mentioned the ways in which Hilton used to cure irritable ulcers, and also his method of employing the cutaneous branches of nerves as a means towards relieving pain in the interior of a joint.

The author then suggested that the patient's mind, since it had such a strong influence in producing disease, should be used as a means towards the cure of disease. He thought that it was in the power of the doctor to use it in an honest way if he chose, since quacks certainly effect cures by using it in a dishonest way. He recommended the removal of anything that would tend to disturb the patient's peace of mind, and amongst other things that act as foreign bodies, such people as those that give out their prognosis within hearing of the patient.

Mr. WILSON did not believe in trophic nerves, and thought that all the nutritive phenomena were explained by alteration in the vessel from the vaso-motor nerves. He considered the coldness of the limb the cause of the slow healing in Mr. Moore's case. He argued from the case of plants that growth might go on without the presence of nerves. He thought the mental effect might be explained through the vessels without inventing the theory of trophic nerves.

Mr. DENDY strongly objected to Mr. Wilson's criticism, and said that if a nerve acted on the muscle cell in an artery, it might also act on other cells by which nutrition was stated to be effected.

Mr. DOWNES said that it matters little whether trophic nerves existed or not as the fact remained that nutrition is greatly influenced by nerves. He thought the existence of trophic nerves rested on very slight grounds, and the experiments brought forward to support the view might be as easily explained by the vaso-motor nerves. The theory of trophic nerves would not explain the effect of section of the spinal cord upon the kidney. He argued from the fact that

in vegetables when no nerves are present nutrition may be very rapid; while in the lowest representatives of the animal kingdom, where few if any nerves are found, whole numbers may be reproduced: also that Cartilage an essentially non-nervous structure is specially prone to repair. In early periods of development there is no nervous system present, while the granulations of wounds may be repaired and reproduced without any wound.

Mr. PRICE thought that it was only in the lowest organisms that nerves were absent, and that here the homogenity of structures was the great cause of repair.

Mr. BAYES agreed with Mr. Morse that particular states of mind were unfavourable to the healing process. He agreed with Mr. Downes that trophic nerves were unimportant, and quoted experiments to shew that disorganisation of the cornea was due to its exposure to injury from the paralysis of the orbicularis palpebrarum. He explained that the amount of heat in a part was not due, as Mr. Wilson had stated, to alteration of the size of the vessel, but to the amount of tissue change going on.

Mr. LANE instanced the bad effect of slight wound on soldiers to show the effect of mental shock. The delayed healing of wounds might be explained by bad feeling.

Mr. SHELSWELL instanced mothers marks, and some cases of idiocy as supporting the nutritive effect of mental states.

Mr. R. SCOTT mentioned a case of injury to the head followed by wasting of muscle on the right side. If the trophic nerve influence were not reliable we required a new explanation of the division of the circumflex nerve on the deltoid muscle.

Mr. DAVY thought it impossible to argue from the plant to the human being, the means by which perfect nutrition of the former was carried on bearing no relation to the complicated mechanism of the latter; and he contrasted the simple means by which circulation is carried on in the plant with the complicated machinery known to take part in our circulatory system. He thought the nervous influence over nutritive processes very great, and as examples of the influence of the mind he instanced jaundice from fright, and a case of Hysteria mentioned in "Wilks on the Nervous System." He believed, too, that it was a fact that the bones in old Dements became brittle out of all proportion to their age, and quoted the opinion of alienists in support of this.

At a meeting of the Physical Society held on Feb. 22nd, Mr. Shaw being in the Chair.

Mr. Whitworth read a paper on Diarrhœa, of which the following is a summary:—

He thought the definition by an old writer that "Diarrhœa is a flux on the belly whereby a person frequently goes to stool, and is cured by purging off the cause," could not be improved on although there were forms of Diarhœa not defined by it. Not coming under such definition being that form of flux from the Duodenum in the Jegunum attended by colic in which the fluid being rapidly absorbed the motions are solid.

He then considered seriatim,

Infantile Diarrhœa,
Summer ,,
Bilious ,,
Dysenteric ,,
Diarrhœa of Typhoid,
Diarrhœa in connection with stroma or tubercle.

Sketching both the chronic and acute forms of the first he attributed it mostly to injudicious feeding by the mothers, and laid down rules as to feeding children, &c.

With regard to Summer Diarrhœa he followed Dr. Johnston of Leicester in believing it was due to the introduction of germs and the consequent putrefactive changes produced in the bowel by their agency. These germs were introduced into the system in sewer gas, fruits exposed in street stalls, milk, &c.

The fæces of patients contain germs, and are infectious in much same way as Typhoid. Dr. Johnston examining fæces of patients had summer Diarrhœa not less than five times.

He then traced out the other forms of Diarrhœa mentioned above, and dealt especially on their treatment.

Mr. MORSE, in opening the debate, commented on the importance of the subject which he thought was often neglected. Infantile diarrhœa he considered due to change of food, as in weaning. He considered nervous diarrhœa to be reflex and not due to dilatation of the vessels, likening it to that occurring with teething.

Mr. STURGE thought the diarrhœa of drunkards was due to increased flow of bile into the bowel. Summer diarrhœa he thought due to unripe fruit and not to germs. In all standing cases of diarrhœa the rectum should be examined, as ulceration there was so often to be found as a cause of the condition.

Mr. BAYES did not believe that germs had anything to do with summer diarrhœa, which with the last speaker, he thought due to unripe fruit. He considered powdered charcoal a useless medicine, as when damp it did not absorb gases at all. Atmospheric conditions—as a thunder-storm—often set up diarrhœa.

Mr. R. SCOTT also thought that it was unripe fruit that caused summer diarrhœa, for which condition he recommended rest and alkalies. He thought the arsenic in the bodies often produced diarrhœa in those dissecting them.

Mr. W. E. STERLING had found abstention from fluids and camphor useful in coryza, and thought the same treatment might be beneficial in catarrh of the bowels. The popular plan of taking alcohol to arrest the flux only increased it.

Mr. BERRY agreed with other speakers in considering nervousness as a cause of diarrhœa. Change of residence will sometimes set it up, the affection recovering on returning to the original locality. Many kinds of foods also—as high game, &c.—will cause the complaint, and such causes suggested the administration of a purge—such as Rhubarb—whose after effect was astringent.

Mr. DOWNES considered summer diarrhœa due to heat and not to fruit or bacteria. The treatment by ice externally and internally combined with rest had been successful.

After a vote of thanks to the reader of the paper the meeting adjourned.

Correspondence.

The Editor wishes it to be distinctly understood that he is not in any way responsible for opinions expressed by Correspondents.

TO THE EDITOR OF THE "*Guy's Hospital Gazette.*"

OUR HOSPITAL NURSING.

SIR,

Will you allow me, through your journal, to call

attention to two serious defects in our present system of nursing.

The one is the way in which extra nurses are put on duty. When during the take-in week a ward is particularly full of bad cases, or when a patient in any ward requires an extraordinary amount of attention, it is the custom for the Sister of the ward, with or without the order of the staff, to apply for extra assistance. In such cases she is very frequently supplied with a nurse utterly incompetent to do her duties, in many cases with a woman who has just come into the hospital, or who has never before had charge of a case.

I well remember, when dresser for the week, having a very anxious case admitted; an extra nurse was sent up who actually passed amongst the hospital nurses by the name of "Silly Charlotte" so notorious was her incompetency. I can undertake to say her name was quite appropriate for being unnecessarily called out of bed three times during the night. I had ample opportunities (which I subsequently improved when for a second time she was put on extra nurse to a case of mine) of observing her *admirable* qualities. This is no isolated case. Time after time one hears the same tale in the rooms. House-surgeons tell us of inexperienced women, who have only been in the hospital for one day, sent to nurse tracheotomies through the night; while we have even heard of an enema administered through the month and of such like vagaries performed on Typhoid patients by the same class of women. It may be urged that the ward nurse should take the bad cases whilst the woman does other duties; but towards morning the night nurse has duties which she only can attend to, and the result is that the critical cases are frequently left for hours to the tender mercies of a tyro. This is the more important because at Guy's the night nurses are under no kind of regular superintendence.

Such a state of things needs no comment, and can so easily be remedied that we are sure the authorities need only have their attention plainly directed to it. At times it may be impossible to have a well trained woman for every extra case, but by keeping three or four in reserve for this kind of work, the occasions when "Silly Charlottes" need be used would be few and far between, instead of being as now the rule. The second defect has only been felt since the new system of nursing has been introduced. We quite understand that the working of any new change must be difficult to one who for years has followed an old plan which chiefly aimed at making the nurses into well trained scrubbers. If, however, the probationers are to become well trained nurses, it seems very important that they should not constantly be changed from ward to ward as is now done. As soon as a probationer has become accustomed to the routine of one ward she is now changed to another. As a consequence she learns nothing, while no one learns anything as to her qualifications as a nurse, and, as a consequence women are frequently put in as nurses who are quite unfit for such a position. If probationers were always kept longer in one ward (even perhaps until there was a vacancy for them as nurses as is often done in the medical wards) they would have more chance of learning their duties properly, while sisters would have more inducement to train them and would be spared the bother of frequent change. It would then also be possible to see how fit the probationer was to continue in the hospital, for if a sister condemned her as unfit, there would be no further need to keep her.

While apologising for the length of my letter, allow me to express a hope that it may favourably actuate those who have the power to make the amendment.

I remain, Yours,

A late Resident Obstetric and Surgeon's Dresser.

To the Editor of the *Guy's Hospital Gazette.*

The following copies of letters from Mr. E. R. Mansell, M.R.C.S., now in Natal on the Army Medical Staff, will be read with interest by many of his fellow students. The first letter was written from Ekowe or Atchowe in Zululand, when with Colonel Pearson's column, the second letter from Stanger in Natal, after his return from Zululand. He appears to have been sent to the latter place in medical charge of the troops who were detached from Colonel Pearson's column and sent back into Natal, after their receipt of the intelligence of the fatal day at Isandula.

ATCHOWE, ZULULAND,
January 24th, 1879.

MY DEAR——

Here I am forty miles up the Zulu country, and glad to have a rest for a day or two in a fixed camp. We had our first engagement with the Zulus the day before yesterday. We had started at five o'clock, and at eight were thinking of having breakfast, when we entered a kind of basin with hills and thick bush all round. Soon we heard the sound of firing, and the company of the Buffs in part with the Artillery immediately took up a position on a little hill in the centre, as it were, of the basin. The bullets flew from the Zulus on all sides, and they made a gallant attempt to cut off our advance guard from the waggons, and the rear guard and second column who were following. Things looked rather critical about this time, but the Buffs, Naval Brigade, and Artillery kept up such an incessant fire from Martini's, shells and rockets, that, after a fight of two hours, the Zulus retired over the hills and the battle of Imyazana, the first large engagement with the invincible Zulu was won. We lost 9 killed and 16 wounded of Europeans, and four of the native contingent were killed also. We three surgeons had our hands pretty full, and there was no time for us to get our ambulance into a protected spot.

Colonel Pearson had a horse shot under him, Colonel Parnell had the same, and altogether it was a very warm engagement. We calculate that 300 Zulus were killed out of an army of 4,000 men, who were almost all armed with some kind of gun. The shells did splendid execution, one clump of ten men was found all dead from one shell. Three men were found almost shrivelled by a rocket. I did not myself

at first like the ping of the bullets, but when the wounded came in I ceased to notice them.

We are at present stationed at a deserted mission station. The hospital tents are close to the church, and I am sitting in my tent, a first rate double one, with my writing case on my knee. I had a heavy night last night, was called up to the sick four times. The climate here is magnificent, and with the exception of a slight attack of heat-stroke 10 days ago, my health is first rate. There is no grog to be got, and tea and coffee form our ordinary drinks. Food on the march up was decidedly meagre. A biscuit in the early morning and one meat meal was all one got. I have nothing more to say. In ten days we commence our march again on the King's kraal and I hope that you will hear soon that the villainous Cetewayo is no more. There are three large columns of Europeans now marching against him, and another composed of 3000 natives of Natal. All the men are in high spirits, and are looking forward to the next brush with the black enemy.

Yours truly,
E. R. MANSELL.

STANGER, NATAL,

MY DEAR——

Just a line to say that I rode down from Zululand yesterday with mounted infantry and volunteers. We did 37 miles in about 10 hours.

I am quite well and safe. Things look rather awkward, as you will see by the papers.

Yours truly,
E. R. MANSELL.

Posted at Durban, 29th of January.

CLINICAL OBSERVATION.

SIR,

If it were asked of any of the students of our Hospital in what way it chiefly recommended itself to their choice as a School of Medicine, I believe that the reply would be, in nine cases out of ten,—the practical character of its teaching—the almost unlimited opportunities afforded for actual observation of sick persons—and the freedom allowed to every student to carry out such observation at all hours of the day. These have been and will we hope long continue to be essential features in the character of the Hospital, but, if the trespass upon your space be allowed, it is to the method after which these advantages are at present employed that I purpose to draw attention in this letter.

Let me for a moment call to mind a quotation, doubtless familiar, which appears week after week (and seems always to gain force as it becomes more familiar), in the best known medical journal. "Nulla autem est pro certo," &c. It is not only the records of important and leading cases with which we should become acquainted, but it is the *comparison* of these with cases under our own observation that renders them of true value to us as means of thoroughly learning the phenomena of disease. With our excellent system of subdivision of the work of treating and observing cases, it follows as a matter of necessity that every student who has completed even the minimum course required by the examining boards, can boast of some cases of *his own*, and it must be admitted that these cases are the ones which will remain longest in his memory, if indeed they do not come, as is often the case, to be taken as types of disease from which other people's cases present various departures.

It is the common experience of almost all clinical observers that this feeling tends to grow less as personal experience and observation become extended. At Guy's we have the fullest and widest means of extension of personal observation, but are we not rather prone to watch none other than those cases wiht which we are brought in relation during our respective periods of office, either Junior or Senior?

Doubtless a strong reason for this rather lamentable fact is a very natural feeling of the impropriety of poaching on other people's preserves.

Once under the guidance of physician, surgeon, or registrar, all such feelings melt away, but observations thus made under direction have never the same adhesiveness as those made independently, nor are they of the kind which can be used for that comparison on which the "*Lancet's*" stereotyped quotation lays such vigorous stress.

It too frequently happens that clinical symptoms and physical signs are but half appreciated, or perhaps not observed at all during the teacher's visit to the bedside, because the case, though familiar to the teacher, is seen for the first and possibly for the last time by the student, and again, for a like reason, the questions which the latter may put to the former are often prompted rather by a desire to display some disconnected fragment of knowledge on the subject under discussion, than to lead to a more lucid explanation of the less clearly understood facts in connection with the case. That such a state of things would be of less frequent occurrence if the custom of independent observation were more general, I cannot for a moment doubt, and the difficulties in the way of those wishing to adopt it appear to be practically none.

So far from objecting to the trespass on their preserves, I believe the clinical clerks and others would hail with satisfaction the opportunity thus afforded of discussing their cases without that reserve which is so often felt in the presence of teachers, and I know from personal experience that those holding the senior appointments, albeit their time is already well occupied, would always be ready to afford facilities for examination of patients to any of their fellow students thus wishing to extend their clinical experience.

In this manner the more valuable cases in the wards would come to be the "property," and hence the means of knowledge of several instead of a few, and thus also the clinical teaching would be found to become more vigorous than it sometimes is at present, when indifference and lack of interest on the part of the listener is prone to lead to a corresponding absence of energy on the part of the lecturer.

A very few hours per week would suffice for the acquisition of some knowledge at least of the progress of interesting and useful cases, and believing that the time thus spent would be found to bring good results to all concerned, I venture to lay the proposition of an extension of the range of their clinical experience before the numerous readers of the *Gazette*.

I am, yours obediently,
E. CLIFFORD BEALE

FOOTBALL NEWS.

This month we are able to give the three football matches for the Inter-Hospital Challenge Cup, and to congratualate ourselves on our well won victories. St. Mary's having drawn us and given up the fight, the first match played was against University College Hospital. The points won in this match were but few, partly because some of our best men were unable to play, and the rest of the team being thus discouraged. The game however was won, and we had then to play our old opponents St. George's, who were beaten in a manner which points to the great superiority of the home team, although our

opponents gallantly contested every point of the game. The final tie was played against St. Bartholomew's and we believe it is the first time that the two largest of our metropolitan schools have thus contested for the Challenge Cup. That we should prove the victors was only what we expected, but we did not expect that we should have gained so many points and that our opponents overthrow would have been so complete.

We heartily congratulate our men on the splendid play which has again gained for us the Challenge Cup, and all connected with Guy's will join with us we are sure, in our congratulations. That Guy's should be amongst the first in all examination work is only to be expected from her manifold advantages and rapidly improving class teaching. But that she should, on the whole, stand first in everything is only another example that the best workers are also the best players. All of us are proud that we can beat all comers at Kennington as well as at Lincoln's Inn, at Burlington House as completely as at Lillie Bridge. That we have attained this position is due to our athletes equally with our workers, and we have to thank our football team for proving that we have not degenerated during the last few years.

INTER-HOSPITAL CHALLENGE CUP.

GUY'S *v.* UNIVERSITY.—(1st TIE.)

This match was played on the Clapham Rovers Ground, at Wandsworth, on Monday, March 3rd.

University lost the toss and Lister kicked off for Guy's down the hill; Wilkinson got hold of the ball and ran to within twenty yards of Guy's goal, and soon after Guy's were obliged to touch down.

After the drop out Satshell made a good run, and again threatened Guy's goal, which however was relieved by a good drop of Blatherwick's. The next noteworthy incident was a very good run by Shepherd, the ball being taken close to the University goal line, where some very hard fought scrimmages occurred. Jackson then made a fair catch but the place kick was charged down.

University by the good forward play of Northcote, Boxall, and Dobell gradually worked the ball into Guy's twenty-five, but Jackson by a long punt drove it to the University back, who muddling it, thus caused the next scrimmage to be formed in his own territory. Again the scrimmages were hard fought, the Guy's forwards headed by Fraser, Growse, Jeyes and Boswell shewed to the best advantage. At length the ball came out to Shepherd at three-quarter-back, who ran in close to the goal posts, but the try by Jackson failed. After the change of ends, the play for a considerable time, became pretty even, until some bad passing by University, and good dribbling by Growse ended in a touch in goal for Guy's. After the change of ends University played up more energetically, and gradually drove the ball down the ground, and forced their opponents to touch down. Nothing further of importance happened and Guy's won by one try and one touch in goal to two touches down, or four points to two. Besides those already mentioned Long, Salvage, Clairmont, and O'Connor did good work for their respective teams.

University.—Northcote (*Captain*); Dobell, Boxall, Wray, Welch, Culham, Harries, Collingwood, Downing (*forwards*); Satchell, and Clairmont (*half-backs*); Wilkinson, and Walker (*three-quarter-backs*); Pike and O'Connor (*backs*).

Guy's.—J. H. Lister (*Captain*); J. J. Boswell, A. A. Jeyes, J. A. Fraser, W. Growse, R. Browne, J. V. Salvage, L. A. Dunnard, T. R. Atkinson (*forwards*); A. H. Jackson and Q. R. Veitch (*half-backs*); T. A. J. Shepherd, and T. W. J. Long (*three-quarter-backs*); H. Blatherwick, and J. B. Howell (*backs*).

GUY'S *v.* ST. GEORGE'S.—(2nd TIE.)

The match between these two hospitals which was looked upon by the knowing ones as being likely to turn out the winner of the cup for the ensuing year, was played on the Clapham Rovers ground on the 13th ult. Guy's appeared in full force, Stokes about whose turning up some doubt was entertained, playing in his well known form. The toss being won by the St. George's captain, Stokes kicked off for Guy's, a slight wind helping St. George's. After the kick off the ball was well returned into touch by the St. George's back. On the ball being thrown out Guy's lost no time in commencing work, and loose scrimmages being the order of the day, soon forced their opponents to touch down. On restarting the ball the St. George's forwards, by good combination play, forced Guy's in their turn to touch down in self defence. The ball was quickly dropped out, and more scrimmages resulted, in which the St. George's forwards tried to keep the ball, but Guy's using their feet succeeded in breaking up scrimmage after scrimmage, and Lister gained a try which was disputed on the plea of the St. George's back having fallen on the ball, and so the claim was waived. Soon after the ball was restarted Shepherd had a good change of running in, but for some reason or other, preferred passing the ball into touch rather than to pick it up. At this stage of the contest fast play was the order of the game, and Salvage making use of a chance succeeded in securing a try for Guy's from which Stokes kicked a goal. The St. George's men nothing daunted played up all the harder, Maitland and Freeborne being especially serviceable forwards, and College three-quarter back again and again did his utmost to get round Stokes and Shepherd but to no purpose.

Just about this period of the game, Taylor made a very good run which was of great service to his side. The Guy's forwards however having again got the ball up to touch about five yards from goal, Veitch by a judicious throw out to Fraser, enabled him to pass the ball to Stokes who ran in close to goal: from this try however only a poster resulted, and half time was then called. The ball was soon restarted by Taylor and for some time was rushed up and down the ground, Jackson's play being simply splendid, his tackling running and punting being perfect. A lucky bit of play on the part of Lister, resulting in a run of about twenty yards was of much service to Guy's, and the ball being taken through the scrimmage Veitch gained a try from which Stokes kicked a goal. From now till time was called nothing occurred worthy of comment. St. George's however continued to play up in the same hard and plucky way which had characterised their play all through, were unable to secure anything more against the unselfish play of the Guy's forwards, the good passing of the team generally, and the dropping and punting of their backs. Without doubt this is one of the best, if not the best, exhibition of football yet seen in the cup matches during the last three years.

It is unnecessary to single out any of the forwards as worthy of mention as all played well, and of the backs especially Stokes, Jackson, and Veitch were to the fore.

Guy's.—J. H. Lister, J. J. Boswell, W. Growse, A. A. Jeyes, L. A. Dunn, J. V. Salvage, J. A. Fraser, R. Browne, and R. Cuff (*forwards*); A. H. Jackson, and Q. R. Veitch (*half-backs*); L. Stokes, and T. A. J. Shepherd (*three-quarter-backs*); H. Blatherwick, and J. B. Howell (*backs*).

GUY'S *v.* St. BARTHOLOMEW'S.

This, the final match, came off at Kennington Oval on Monday, March 17th. There was a very large attendance of spectators amongst whom we noticed several members of the staff of both hospitals. The day was dull but rain did not actually fall, and the ground was in very fair condition.

Guy's won the toss and Stokes kicked off from the gasometer end. Clarke returned the ball and the first scrimmages were formed in neutral territory. Guy's however forced their opponents back to the beginning of their twenty-five, where Stokes made a fair catch, from which he dropped a most beautiful goal, amidst the cheers of the Guy's faction. This was most discouraging for the St. Bartholomew's men, as the scrimmages up to this time had been of a very even character. Just at this time Lister unfortunately met with an accident to his shoulder, which, though he attempted to play for some little time ultimately compelled him to retire. After Clarke had kicked off again Jackson made one or two very good runs, and also a fair catch, the latter at some distance from St. Bartholomew's goal. The kick by Stokes did not add materially to Guy's score and more scrimmages were formed well in the St. Bartholomew's half. A misunderstanding here gave Roberts a good chance which he made the most of in a run of about thirty yards till he was well stopped by Howell. A long kick was well dropped back by Howell, after which more loose scrimmages ensued. A good run by Roberts was the next noteworthy incident, and a drop by Clarke was well returned by Blatherwick. Salvage then made a very fine run up the right side of the ground, ending in touch about twenty yards from St. Bartholomew's line. After a few loose scrimmages Shepherd got well away and being collared passed to Veitch, who in turn passed back, and Shepherd got in about twenty yards from the corner, the place however failed and St. Bartholomew's touched down. Matters looked but badly for St. Bartholomew's who had up to the present scored nothing to their opponents thirteen points. After the drop out a short run and drop by Stokes forced St. Bartholomew's to touch down. A magnificent run by Shepherd, undoubtedly the finest in the match, in which eluding all the backs he got safely in between the post, was most heartily cheered from all parts of the ground: from this a goal resulted. Half time was now called. After the kick off, scrimmages, very hotly contested, were the order of the day, until Veitch by a long run, about half the length of the ground succeeded in gaining another try for Guy's. The place was an unfortunate one the ball rolling over before the kick, but Salvage by his usual good following up, rushed in and obtained another try before St. Bartholomew's were able to touch down. The place did not result in a goal. Clarke dropped out and more scrimmages ensued with varying success in spite of Guy's being without the services of their captain. Roberts, who had been playing splendidly all through, now made a magnificent run which was stopped by Blatherwick well in the Guy's half. Roberts had a fair catch directly after but the kick by Chipperfield was a miserable failure. Bartholomew's were now very well together and too much praise cannot be given them for the plucky way in which they played up until the last: Power and Roberts being especially conspicuous. A drop at goal by Clarke was charged down by Shepherd and a very good run by Jackson relieved Guy's lines. The ball came out to Howell from a long kick and he failing to pick it up enabled Bartholomew's to gain a lot of ground. Soon after this Guy's were again compelled to touch down. Stokes restarted the ball and good dribbling in the loose scrimmages by Growse was most noticeable. St. Bartholomew's were again compelled to touch down, chiefly through the excellent running and punting of Jackson. Time was called soon after this with the ball well in the middle of the ground. Guy's thus won by two goals, three tries and three touch downs to two touch downs or thirty points to two of the forwards. Salvage and Growse were most conspicuous though all worked hard; and of the backs, to whom the success of Guy's is undoubtedly due, Jackson played most unselfishly and indefatigably all through, and Stokes and Shepherd were continually to the fore. The thanks of the teams are due to Mr. Alcock, the Honorary Secretary of the Surrey county ground, for the state of the ground which had been most carefully rolled. We congratulate Guy's on having won the cup, and hope to see the team again successful next year, as though they will lose the services of Boswell we hope that some new man will be found competent to fill the place of so useful a forward.

St. Bartholomew's.—W. E. C. Taylor (*Captain*); E. T. Powell, T. Kirsopp, E. R. S. Faddy, H. Cambell, W. Kay, A. E. M. Smith, J. W. Field and C. Sanders (*forwards*); A. H. Roberts and T. E. Square (*half-backs*); E. P. Clarke and C. H. Chipperfield (*three-quarter-backs*); H. F. Hane and H. W. Stevenson (*backs*).

Guy's.—J. H. Lister (*Captain*); J. J. Boswell, W. Growse, A. A. Jeyes, R. Cuff, J. A. Fraser, R. Browne, J. V. Salvage, and L. A. Dunn (*forwards*); A. H. Jackson, and Q. R. Veitch (*half-backs*); L. Stokes, and S. A. J. Shepherd (*three-quarter-backs*); H. Blatherwick, and J. B. Howell (*backs*).

NOTES OF THE MONTH.

ON DUTY FOR MARCH.

House Physicians—J. C. Uhthoff, H. Davy.
Junior House Physician—E. H. Paddison.
House Surgeons—R. J. T. Wainewright, J. Meek.
Junior House Surgeon—C. H. Keep.
Senior Resident Obstetric—C. Wood.
Junior Resident Obstetric—J. Osborne.

RESIDENT DRESSERS.

March 1st.—Mr. J. Alexander (Mr. Bryant).
„ 5th.—Mr. H. H. Austen (Mr. Durham).
„ 12th.—Mr. T. B. Cross (Mr. Howse).
„ 19th.—Mr. T. D. Malpas (Mr. Cooper-Forster).
„ 26th.—Mr. F. Jones (Mr. Bryant).

The Presidents of the Physical Society acknowledge Subscriptions to the *Gazette* from the following gentlemen:—

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GUY'S HOSPITAL GAZETTE,
APRIL, 1879.

CLINICAL LECTURE ON A CASE OF GANGRENE OF THE RIGHT FOOT WITH DROPSY OF THE WHOLE LOWER EXTREMITY.

By Dr. W. Moxon.

Before discussing the case, Dr. Moxon spoke of the various kinds of Dropsy :—

1st.—*Cardiac Dropsy*.—The blood is pumped on and made to circulate by the action of the heart, and if this becomes enfeebled the blood gravitates and its watery parts ooze out into the textures. To put this into more strictly accurate and scientific language, the blood in circulating feeds the textures by pouring out lymph into them which afterwards returns into the circulation partly through lymphatic ducts and partly through the veins. In Cardiac Disease the engorgement of the Venous System causes,

1.—Obstruction at the Thoracic Duct.

2.—Obstruction in the Veins.

And hence the re-entry of the lymph is impeded and Dropsy results. In Cardiac Disease also there is always a check of the Urinary secretion, and hence the blood contains too great a proportion of watery constituents.

We must recollect that all our life the blood is gravitating down the legs whilst we are in the erect posture, and thus the hæmostatic column is great and the vessels of the legs are all one's life at a great disadvantage, the veins becoming more or less distended and after a time losing some of their elasticity. This must be taken into account in any explanation why Cardiac Dropsy first shows itself in the legs. If a patient suffering from this kind of Dropsy is made to lie on his back the blood more easily gets into his thighs and thus into the unobstructed vessels and in this way disappears. Cardiac Disease by causing obstruction in, and distension of, the abdominal veins, prevents these from taking up the nutritive fluids from the intestines. The chyle ducts also become distended and the circulation impeded by the obstruction to the entry of the lymph at the thoracic duct. Hence the blood is always thin and watery, and patients with Cardiac Dropsy very quickly get emaciated.

2nd.—*Dropsy of Bright's Disease.*

In this form of Dropsy the patients are swollen all over the body and the urine becomes scanty. As regards this last fact, you must be careful as to the history, for patients pass their urine so frequently that that they sum up the number of times they do so, and think they pass a large quantity. In explaining this form of Dropsy you might say "The watery constituents of the blood are not drained off by the kidneys and hence the blood is too watery and exudation takes place." In support of this view you might call to mind Dr. Haile's experiment of injecting water into the Carotid of a dog when he got anasarca in all parts of its body. But against this we know that excessive Renal Dropsy may be present when the patient is passing large quantities of urine and when the above explanation therefore will not hold good. It is true that in these last cases the patients are losing large quantities of albumen, and that its watery constituents may be relatively increased by this loss; but even then it may be replied that in Chlorosis of the most extreme type, when the blood may contain only half its normal quantity of corpuscles, the amount of Dropsy is very slight, and only takes place towards night when the patient has been about all day.

Another explanation might be that the re-entry of lymph into the circulation is prevented more or less by a watery state of the blood, and that in this way the lymph effused into the tissues is not absorbed. But the same thing ought to occur in Chlorosis, and its non-occurrence answers the explanation.

These explanations then being insufficient, we may turn to the old name which terms Bright's Disease "Active Dropsy." The output of such products being checked, the blood contains urinary ingredients, which irritate the textures, setting up a controlled sub-acute inflammation which never goes on to the formation of pus. In support of this view it may be urged that in Bright's Disease the patients are liable to inflammation of the large serous sacs, and also there is very often a variation of the position of the Dropsy from time to time as if irritation were it source.

Another explanation has been given by Dr. Owen Rees, who, taking up Graham's views on Dialysis, thinks that the urinary products being retained in the blood thus becomes full of crystalloids, and thus its watery ingredients pass more easily through the texture.

3rd.—Some other forms of Dropsy as that due to *Hepatic Disease* where there is a general deterioration of the system and you get Dropsy as an early symptom in the legs.

Ovarian Disease when the Dropsy is not so early a symptom and the general deterioration of Hepatic Disease is wanting.

Some people with "Cancer of the Stomach" often come to a doctor complaining of swelling of the legs and only incidentally mention that they suffer from great pain in the stomach.

Dropsy may come on in the course of many grave diseases, great pain being felt and the legs becoming swollen. Then it occurs in Phthisis, Diabetes, Typhoid, and more rarely in Typhus, Gout and Phlebitis.

Dr. Moxon then passed on to the case which called out the preceding remarks.

Patient, a woman, had a fall some years ago, since which she has never menstruated. After this her

liver became very big and she felt great pain in her right side. The right leg then swelled. At the present time her right leg is swollen; the Femoral can be felt pulsating, but the Dorsalis Pedis and Tibialis Posticus cannot be recognised. She has gangrene of the toes and complains intensely of cold if these be uncovered.

If the left leg was affected instead of the right we might think that the enlarged liver caused some obstruction to the Vena Cava, since the circulation in the left leg is more easily affected than the right. The leg was red before it swelled, so that Phlebitis may have been present, but this does not seem to have been the case.

Is the Dropsy of Nervous Origin? It is known that Dropsy may occur with Hemiplegia, and Mr. Hutchinson believes that the Nervous System is largely concerned in the production of gangrene. We know also that the temperature of a limb falls several degrees after Nerve section, and Paraplegics often complain bitterly of cold in their feet. Very bad cases of Gangrene occur after wasting diseases, but in every case in which Dr. Murchison found this to have occurred the Femoral Artery was found blocked up. When the vital powers are depressed, you may, however, get Gangrene of the ear, and the blood supply to the ear being trifling, it may be that that the Nervous System alone is in fault in producing the Gangrene.

Dropsy may of itself cause Gangrene, but in these cases the cause is clear. The skin wont stretch for ever, it cracks transversely to the line of pressure and intense inflammation around the crack gives rise to Gangrene.

But when, as in this case, the tips of the toes are gangreneous, we must look to the arteries as being blocked. In this case both the Artery and the Vein must be affected, for the obstruction to the former will not explain the Dropsy.

Possibly the Vein and Artery are both pressed on by enlarged lymphatics, or possibly there is Cancer of the liver affecting the Vena Cava and thus causing the Dropsy, with secondary growth in the leg blocking up the Artery and causing Gangrene. The cause, however, is obscure and will only be cleared up after death.

NOTE ON THE TRIANGULAR LIGAMENT OF THE URETHRA.

By R. E. CARRINGTON, M.B.

The triangular ligament of the urethra has in my experience usually proved to be somewhat of a stumbling block to students. This note is written with the view of endeavouring to make this little point of anatomy clearer. The difficulty, I believe, arises from two causes: *firstly*, that identical parts of the pelvic fascia have received a different nomenclature; and *secondly*, that an incorrect, or at all events an inexplicit account is in most cases given in the text books in ordinary use. To obviate the first difficulty: in this communication I shall take that account of the pelvic fascia which is now commonly received, and indeed, followed by, the authors usually read, but the connection of the various parts of which in the description of the structure under consideration are not explicitly stated. I mean that in which the part of the fascia above the *white line* is called Pelvic, below it obturator, whilst the part extending on to the viscera is called Recto-Vesical.

If we run over now the various descriptions given we shall find that there is no difficulty about the *anterior* or superficial layer, that is described by all as a *special* layer of fascia closing the upper part of the pubic arch; but it is with the connections of the *deep* layer that the discordant accounts real or apparent are given.

Thus, Gray says, in one place, "the posterior layer is derived from the *pelvic* fascia," and in another "the *pelvic* fascia is continuous below the pubes with the fascia of the opposite side so as to close the front part of the outlet of the pelvis blending with the posterior layer of the triangular ligament" and further the *obturator* fascia is "attached to the pubic arch." Quain says, "this layer (*i.e.*, deep layer of triangular ligament) is superficial to the anterior fibres of the levator ani which lie between it and the *pelvic* fascia," whilst the obturator is described as being "attached to the rami of the pubes and Ischium." There is nothing said as to the connection of the triangular ligament with the pelvic fascia or with any part of it, and I think the inference to be drawn is that both layers of the ligament are to be looked upon as *special* structures.

In Heath's account of the triangular ligament, no mention is made of its connection with any part of the *pelvic* fascia, but in describing the *recto-vesical* layer, the following addition is made, "it is seen to dip down to the prostate, and is thus continued from one side to the other of the pelvis of which it closes the outlet."

Finally, in Ellis, we find that the *Pelvic* Fascia "is continued from the one hip bone, to the other, so as to close the cavity of the pelvis in front for a shortdistance." The *Recto Vesical* fascia between the pubo-prostatic ligaments of opposite sides "dips down to reach the apex of the prostate and the *triangular ligament, and closes the pelvis between the levatores ani*, whilst we find that the posterior layer of the triangular ligament "is derived from the *Pelvic Fascia.*" This last account is doubtless the correct one, if for *pelvic* fascia we write *obturator*, it seems that the following considerations will make the matter clearer:—

1.—The pubic arch is of course below the level of the symphysis.

2.—The white line extends from the lower part of the symphysis.

Therefore the triangular ligament must be *below* the level of the *Pelvic* Fascia which only extends to the *white line*. The true accounts of the triangular ligament is therefore as I think as follows:—The superficial layer is a *special* fascia. The deep layer is formed by the *obturator* not *pelvic* fascia, which anteriorly may be said to stretch across the pubic arch and close it, or perhaps a little more exactly the obturator fascia may be described as running down to be fixed to the margin of the pubic arch and a little above its attachment to give off a process which passes across the upper part of the pubic arch, continuous with the like process of the opposite side forming the deep layer of the triangular ligament. This process joins behind with the *Anal* Fascia. It is, as I have said, probably a little more accurate, to describe it thus, though not quite so simple as to take it that the obturator fascia is continuous across the arch, and for it I am indebted to Mr. Lane. I don't think, however, it would be correct to say that the deep layer is derived from the anal fascia, as this would be tracing a thicker fascia from a thin one, but it is rather that the *Obturator Fascia* gives off a process which in front closes the pelvis and forms the deep layer of the triangular ligament and behind covers the under surface of the Levator ani muscle the two being directly continuous with one another. My point is, however, that the deep layer of the ligament is below the level of the pelvic fascia, and not derived from it, but from the obturator.

Finally above the Triangular Ligament, the Recto-Vesical Fascia closes the pelvis between the two pubo-prostatic ligaments and dips down to join the deep layer of the Triangular Ligament in the median line, so that from without inwards just below the pubes we find *three* layers of fascia.

1.—Superficial layer of Triangular Ligament.

2.—The deep layer or continuation of *Obturator* Fascia.

3.—The Recto-Vesical Fascia.

Then between the process of Recto-Vesical Fascia which closes the Pelvis above the Prostate and the deep layer of triangular ligament, a median septium is found leaving on either side a space in which the anterior fibres of the Levator Ani run up to the symphysis.

Dr. Symonds, I believe, describes the Recto-Vesical Fascia as dipping down in the median line and then passing outwards to the pubic arch forming thus the posterior layer. This seems to be substantially the same as the account given above.

My object in writing the above note is to endeavour to make the description of this structure a little clearer and to reconcile the various accounts I have read or heard of. I believe there is no real discrepancy in any of them if we take it that the designation *Pelvic fascia* is used in a general way to include the obturator. Finally, and this is most important of all, I believe dissection will verify what I have written.

SOME NOTES ON HERNIA.

By A. Scott.

Anyone who read Mr. Davy's Prize Essay for the "Gurney Hoare" of last year, must have been struck with his graphic description of the case of Strangulated Omental Hernia, and the important questions he there raises. The questions I refer to are,

1.—The symptoms caused by such Strangulation.

2.—The justifiability of operating in irreducible Omental Hernia without symptoms.

Concerning the 1st question, there is, as far as I can ascertain, very little known. Most writers put the question by simply stating that they are much the same as those of strangulated intestine, only less acute. Holmes confesses that it is at least odd that a piece of omentum can be completely strangulated by the stout silk of the surgeon without giving rise to symptoms, but having worked himself up to a mild state of wonderment, he there drops the question. But we are driven to admit that, in some cases there are symptoms perfectly indistinguishable from those of strangulated gut. That is to say, a case of Hernia, with all the characteristic symptoms, is placed on the operating table, the sac is laid open, and only omemtum is found. Now, I saw such a case myself only a few weeks ago, but in that case there was no doubt that the tumour a few minutes before the operation had suddenly become less; in fact, as I believe, the piece of strangulated gut had slipped up into the abdomen; the result of the application of ice pending the arrival of the surgeon. That, then, is one explanation, I believe, namely the overlooking of a portion of intestine owing to its escape between the examination in the surgery and the exploration in the theatre.

There is another explanation which seems to be perfectly possible, though I have never had the chance of verifying it by post-mortem examination, viz., that the incarcerated omemtum exercises traction on a piece of intestine which is still in the abdomen, but to which it has been bound down by adhesion. One can easily imagine how a piece of gut and omemtum after residing in the same Hernial sac for some time get so bound down, and we can quite imagine that the gut, by peristalsis gets pulled up into the peritoneal cavity, but still bound to the omentum.

It does not need an unfair stretch of the imagination, I think, to picture such a state of affairs. We know that the omentum and bowel become united one to the

other, and all we have to imagine is the constant peristalsis of the gut higher up, or perhaps, the rough manipulation of the surgeon to replace the herniated gut again inside the abdomen, but with its omental adhesion still firm. A surgeon operating in such a case would only find omentum, and so hastily put the strangulated omentum down as the cause of all the mischief.

I should not have troubled my readers with all this preface unless I thought I had reason for showing that strangulated omentum gives rise to few or no symptoms directly, indirectly it must, for complete strangulation means gangrene of the part, and it would be useless to contend that such a gangrene would cause no symptoms. I can also understand inflamed omentum giving rise to symptoms, but what especially I want to show is that strangulated omentum does not give rise to the symptoms of strangulated intestine.

The completest of all strangulations, namely, the silk of the operator, gives rise to no symptoms. So much, Holmes admits, and marvels thereat. Thus, then, if symptoms arise, they are not due to complete strangulation, but to incomplete. But, unluckily, for this last resource, there have been a series of cases lately in the hospital, in which all grades of strangulation have been present, but without the symptoms of strangulated intestine. One case, especially, is worthy of record. The patient is a man well advanced in years. For two years he had suffered from a left scrotal hernia, for which he wore a truss. On the morning of the day that he was admitted, the hernia, owing to a violent attack of coughing, came down larger than ever.

He was seen in the evening, when it was ascertained that there was something solid in the hernial sac, besides a huge hydrocele. The hydrocele was tapped, but no impression could be made on the mass left behind. Ice was applied and small doses of opium administered by mouth, and the patient was left for the night. On the following morning, to our surprise, the hydrocele had returned, but on the arrival of Mr. Howse, whose case it was, the following interpretation was put forth. The mass was, as we had supposed, omentum, but omentum in that state of semi-strangulation described by Mr. Davy, in which the constriction affects only the more flaccid veins, leaving untouched the more rigid arteries. In course of time the omentum gradually went back, and with it disappeared the hydrocele. Throughout the whole case there had been no constitutional symptoms, only the local uneasiness.

Here we have a state of strangulation acute enough to give rise to a large hydrocele in the course of a few hours, but yet to no symptoms. In the other cases, which space will not permit us to report, the strangutations were less acute, but still no symptoms. I should add that the hydrocele in these cases is due to overloading of the veins in consequence of their constriction, and is nearly always to be found in such cases.

Thus, then, are two degrees of strangulation—the complete and the incomplete—as evidenced by the surgeon's silk, and the case I mention. Neither of them gave rise to symptoms. The inference to my mind is irresistible.

Concerning the second question, namely, the justifiability of operating without symptoms, I cannot do better than refer my readers to Mr. Davy, only adding that his conclusions on this point are amply justified by the results of these recent cases.

THE PHYSICAL SOCIETY.

The 11th Meeting of the Physical Society, Mr. White in the Chair.

Mr. Bayes read a paper on Nitrogenous Metabolism of which the following is an extract.

Nitrogen plays so important a rôle in the death and regeneration necessary to the existence of organisms, that it has been stated that, "The whole secret of life may almost be said to be wrapped up in the occult properties of certain nitrogenous compounds." The changes which nitrogenous compounds undergo is well known, as regards the ingesta and egesta but the intermediate links and changes are not well understood.

He then traced the action on nitrogenous compounds of Gastric Juice, Pancreatic Fluid, &c., until they arrived at Peptones, Parapeptones, &c., which underwent absorption.

Having followed our ingested nitrogenous matter through its changes up to the time of absorption we have to ask the questions what are its excretory representatives? Where are they formed and from what immediate antecedents?

Briefly stated its excretory representative is urea, which with uric acid and one or two other compounds are mainly excreted from the kidneys, although the bowels and skin are also concerned in its excretion.

The urea in the urine is therefore usually taken as representing the nitrogen excreted, but the urine contains other nitrogenous compounds, kreatinine, &c., which must be estimated if strict accuracy is required.

He then discussed at some length the question "Where is urea formed?" coming to the conclusion that "the fact that urea does always exist in the blood, as also in many of the tissues, is sufficient proof that its formation is not confined to renal epithelium. At present it seems most reasonable to suppose that it is partly a product of special formation by the renal epithelium, partly formed by other organs and tissues, and then merely selected from the blood stream by the kidney cells."

Having at length described the decompositions which proteids undergo, and the changes by which fatty acids are formed, he said, "What then becomes of these fatty acids? Do they by becoming oxidised contribute to the heat of the body, or do they become elaborated into fats?" coming to the conclusion that they mostly went to form fats.

"Thus far I have spoken almost entirely of the decomposition of proteid matter which results in an immediate excretion of its nitrogenous moiety. I have now to consider the part which is retained in the body as nitrogenous material. Peptones after entering the blood almost immediately become unrecognisable. Experiments show that during a starvation period the urea excreted during the first two or three days was much greater in amount than that excreted in the days succeeding. This is explained by supposing the proteid material of the body to exist in two forms: firstly, as the proteid matter of the tissues proper; secondly, as a reserve store upon which any of the tissues could draw as they required it. During a starvation period the urea excreted does not undergo nearly as great a diminution in amount before this reserve becomes exhausted as it does after this time. Where this storing of proteid material takes place it is impossible to say. It seems to me not unreasonable to suppose that it is accumulated in certain cells in a manner analagous to fat. We known that a fat cell may accumulate and yield up again large quantities of fat, the protoplasmic cell undergoing at the same time but very little change. In a similar way we may imagine all the varieties of connective tissues, corpuscles, so largely distributed through the body to keep in readiness a constant supply of nitrogenous matter for replacing that which becomes functionally useless and is discharged as urea, &c."

The form in which proteid matter is presented to the tissues is doubtful, but we shall probably not be far wrong in saying that it all undergoes a more or less complete destruction and reconstruction before it becomes organised tissue.

It would seem as if each cell in order to preserve its own functional peculiarity which constitutes cell differentiation must build up its complex living protoplasm from the elements of that protoplasm. Thus we see one cell secreting saliva, another gastric juice, a third giving rise to muscular, and a fourth to nerve energy, notwithstanding the fact that one and all are protoplasmic. As cells of the mammary gland this comprehensive substance furnishes by its own metabolism fat, caseine and sugar, the representatives of the three great classes of food stuffs.

Admirable as is our modern system of constitutional chemistry we are utterly unable to explain by its well determined laws, the endless variety of metamorphoses which living tissue is capable of effecting. This doubtless is the consequence of ignorance, and the progress of scientific knowledge will no doubt do much to remove and reconcile the discrepancies which exist, and when this reconciliation is effected we may hope to have solved that most incomprehensible of questions, What is life?

The debate which followed was commenced by Mr. Whitworth, and continued by Messrs, Beaven Rake, Ryle, Downes, Uhthoff, R. Scott, Morse, Davy and Hart.

The 12th Meeting was held on March 22nd, Dr. Wilks, the Honorary President, being in the Chair, and their being also present the Treasurer and many old members of the society.

Mr. Cock read a paper on "Albumenuria in relation to Bright's Disease," which we hope at a future time to give our readers at length.

The debate was commenced by Mr. Morse in the absence of Mr. Bayes, and was continued by Messrs. Whitworth, Downes, Mackern, A. Scott, Wood and Uhthoff. After which a vote of thanks was passed to Mr. Cock for his able paper.

The Secretary then read the results of the session and the list of the Prizemen.

To Mr. C. H. Downes was awarded the first prize of £10 for his paper on "Acute Rheumatism and its Treatment by Salicylic Acid."

To Mr. Sturge the second prize of £5 for his paper on "Notes on Skin Disease."

To Mr. R. Parry an extra prize of £5 was awarded for his paper on "Rest and Position in the Treatment of Medical Cases."

The prize for the best essay on "The Sympathetic System" was awarded to the essay bearing the motto "Spero fore ut contingat id mihi" the author being Mr. W. Egerton Starling.

Mr. Downes having gained the prize for distinguishing himself in the debates during the session, and being disqualified by the rules of the Society by having gained another prize the, "Speaking Prize" was not awarded, as in the opinion of the Presidents no other member had spoken sufficiently well and *frequently* to be worthy of it.

Four essays had been sent in on the "Histology and Physiology of the Sympathetic System," none had been received on the "Treatment of Chronic Joint Disease."

The following members of the Society were invited to accept the duties of Presidents of the Society, Messrs. Bayes, Cock, Downes, Flanagan, Morse, Penny, Shellswell, Sturge, W. E. Starling, and P. M. Wood.

Mr. Morrison congratulated the prizemen on behalf of the Presidents of the Society, and Mr. Downes, Mr. Sturge, and W. E. Starling replied.

Mr. Wainewright then proposed, and Mr. A. E. Maylard seconded, a vote of thanks to the Treasurer, who in a few well chosen words replied, expressing the interest he takes in the Society, and his desire to consult its welfare in every particular.

Mr. Pitt proposed, and Mr. Morse seconded, a vote of thanks to the Presidents of the Society, on whose behalf Mr. G. Mackern returned thanks.

Mr. A. Scott proposed, and Mr. R. Scott seconded, a vote of thanks to the Honorary Secretaries of the Society, Mr. Lucas and Dr. Symonds, each of whom briefly replied.

Mr. Uhthoff proposed a vote of thanks to the Honorary President, Dr. Wilks, which was seconded by Mr. Sturge, and enthusiastically carried.

Dr. Wilks in his reply expressed the pleasure which he felt in being present, and in being connected with the Society. All Guy's men should be proud of the Society, which was one of, if not, the oldest society in London. He had noticed that the leading students were always prominent members, and he felt sure that no one ever regretted the time spent at its meetings.

This meeting was the last of a very successful session, and there will be no more meetings held until next October.

Members and others wishing to read papers next October are asked to communicate as soon as they can with the Presidents of the Society or with the Honorary Secretaries.

PART OF A DRESSER'S TAKE IN.

TRAUMATIC ANEURISM AND GANGRENE.

W. Johnson, æt. 33, admitted Jan. 21st, 1879. *History.*—On Jan. 20th was cutting some bacon when knife slipped and ran into the inner side of lower part of right thigh. The doctor who was sent for bandaged it up. On Wednesday, 21st, foot began to get blue. Saturday following was advised by another surgeon to come to Guy's. *On Admission*, Jan. 31st, patient extremely anæmic, sallow, &c. At lower part of right thigh on inner side is a pulsating tumour, no bruits. The foot and half of leg is commencing to die, is quite cold and vessels not pulsating. When under chloroform an incision was made over the spot and a large clot removed about size of fist, the femoral artery was half severed across. Amputation was performed, flaps being antero-external and postero-internal. Temperature on admission was 102·0°; P., 130. Feb. 18th, has never had any bad symptoms since operation. temperature at time of operation was 102·0°, has gradually come down to normal. For the last few days it has gone up from constipation. An enema was given which brought away some hard scybalous masses.

DISLOCATION OF HIP ON TO THE DORSUM ILIA.

E.L., æt. 61. The history of the injury is not very clear. It appears he was sitting on the side of a barge, when he was suddenly struck on the outer side of his thigh by another barge which was passing at the time.

On Admission, chloroform was given and dislocation readily reduced by manipulation.

FRACTURE OF FEMUR (SIMPLE).

J. E., æt. 68. Patient was going to bed and had pulled off one of his boots, and was in the act of taking the other off, by poising the heel of his left foot against the toe of his right, when during the act of pulling, his left thigh snapped across about its middle third. Patient is a stout man; he was perfectly sober at the time.

The curious way in which the fracture was produced led to the suspicion of some malignant disease of the bone at the site of the fracture, but of this there is no certainty.

LIPOMA IN GROIN.

H. P., æt. 58. This patient had a tumour about eight inches long and four inches across, occupying the fold of the right groin. It had existed for upwards of twenty years. There was doubt as to its fatty nature. It was removed, and on section there was found in its centre a small mass that had undergone calcareous degeneration.

EPITHELIOMATOUS PAPILLOMA.

J. H., æt. 66, presented himself with a growth over his left knee-joint. It was about the size of a tangerine orange, which caused constant pain, and gave an offensive smell. Patient stated that forty years ago a wart was situated on the spot; this had enlarged and was from time to time cut and scraped down. Growth was removed, and on section proved to be a papilloma.

MULTIPLE EXOSTOSES.

J. H., æt. 16, a telegraph boy, came to Hospital with about twenty exostoses on him. These were situated on both arms and forearms, and on both thighs and legs. Only one gave him inconvenience, and this was situated about one inch above his left knee-joint. This was removed under antiseptic precautions, and up to this date boy has done well.

STRANGULATED HERNIA.

A. E. C., æt. 14 months, boy, was sent up from out-patient room with a strangulated inguinal hernia; it had been down about forty hours. Child had marked abdominal aspect. Chloroform was given; hernia not reduced. Operation followed, bowel returned without opening the sac. Child up to this date has done well.

The operation itself was done under the spray, but it was found impossible to keep the dressings antiseptic.

ADENOMA OF BREAST.

E. H., æt. 20, came to Hospital to have small tumour removed from the left breast. It had existed three years, gave no pain or inconvenience. On removal, section proved diagnosis of Adenoma to be correct.

Wound healed by primary union.

RETENTION OF URINE.—ENLARGED PROSTATE.

J. O., æt. 64, came up to the Hospital about eight o'clock in the evening, saying that he had passed no water for four days, it had dribbled away slightly from him. Catheterism had not been successful. The man was in acute pain. A large silver catheter was without much difficulty got into the bladder, and about three pints of almost black horribly offensive urine drawn off. He was then put to bed. A gum elastic catheter No. 8 had to be tied in as he made an excess of urine, and it gave him great pain to have it drawn off four or five times a day.

AN AMBULANCE JOURNEY IN NATAL.

The interest excited amongst English people in South African affairs, is at the present time so intense that a few reminiscences of life in our far away colonies there, may perhaps be an acceptable variation in the ordinary contents of the *Gazette*. I have selected an "Ambulance journey" for description, partly because it affords a good idea of travel over the district recently traversed by the unfortunate 24th, and partly because its incidents may show how great are the difficulties of transporting sick and wounded troops over the execrable roads and treacherous torrents of "fair Natal."

On the morning of December the 30th, 1878, a little party, of which I was one, was preparing to leave the Gordon Memorial, a lonely mission station in the Umsinga division of upper Natal and eight miles from Helpmakaar, at that time the head quarters of Colonel Glyn's column. In addition to Major Much 1/24th Regiment and the writer, both invalids ordered to Pietermaritzburg, the party consisted of a private of the Army Hospital Corps, by name Conroy and a typical Milesian by nation, a Griqua driver named Brand, and our whipper a Zulu boy commonly called "Jonas." We were up betimes, for in Natal travellers, more especially if they be sufferers from sunstroke, must take the utmost advantage of the small hours. It was quite dark, neither moon nor stars being visible, and it was long before our men accomplished the task of "inspanning" (Anglice "putting to") our six mules, sorry little animals at the best of times, and now worn out by their long journey up from Pietermaritzburg. Our ambulance was one of those then in general use in the command, a sort of omnibus on high wheels, with seats back and front and along the sides. It contains also two stretchers to be laid along the bottom. We were of course provided with blankets, rations, and what few cooking instruments we needed. All being at last ready we shook hands with Dr. Dalzell, the worthy medical missionary who had been our host in the wilds, and "helked" away into the darkness. Much and myself marched a few yards ahead with a lantern in order to point out the faint track which did duty for a road. This was now about 4 a.m. and in about half an hour's time it became light enough for the lantern to be dispensed with and we got up alongside the driver. The view round us was here fine. An open park like plain for a few hundred yards and then range after range of flat topped hills, with here and there a Zulu kraal peeping out and far in the horizon the blue mountains of Zululand proper. Sunrise in these latitudes is a grand sight. I know of nothing much more beautiful than the effects of light and shade that are produced as slowly the pencilled boundary between the two creeps down the hill sides and one object after another starts up into strong relief all the more vivid because of the darkness that but a moment before shadowed it. Of course both sunrise and sunset are very rapid, no perceptible twilight existing. But to proceed: After an hour's steady progress we crossed the "Sandprint" a muddy little stream like coffee, and halted a few minutes at the camp of Commandant Lansdale's Native Battalion. Here was a depôt of the Commissariat Department and we knocked up the sergeant in charge for some rations that we required for the journey. Here our two servants left us to turn back in order to join their regiment at Helpmakaar. Poor fellows, they are both now the prey of the jackall and the vulture on the field of Isandula. Being loaded up we left the camp and struck along the road to Greytown, a narrow sandy track made by successive generations of bullock waggons. Our henchman Conroy preferred marching, no doubt with the ulterior object of begging a liquor from the sergeant before leaving the camp. We did not, however, wait for him, but taking advantage of the road being unusally good, pushed along at a smart trot. For four or five miles all went well, and we had nothing to do but hold on and look out for a jump in case of necessity. The same fine scenery continued around us, no sign of white man of course being evident. Presently a dry watercourse however interposed in our way. Two paths led over this. Mr. Jonas, who was at the time driving, with a view of acquiring that useful art, chose the right hand one with the unfortunate result of bringing us to a dead stop at the side of a bank with the vehicle in a very oblique position, and threatening to topple over every minute. Major Much and myself evacuated our position by a rapid flank movement and found ourselves emphatically at a standstill. No amount of whipping the mules or pushing at the wheels would suffice to push the ambulance any further up the bank, and any attempt at letting it down would have infallibly brought about the downfall of the whole concern. We held a council of war and divided our forces. The boy pulled at the heads of the mules, Major Much applied the whip vigorously to the unlucky animals' backs. Brand hauled at one wheel and myself at another, but all without moving the ambulance an inch. With probably not a human being within miles the situation was not satisfactory. Shortly, however, a reinforcement appeared in the person of Conroy, who came panting along in the distance. On arrival he was at once pressed into the service and after about quarter of an hour's vigorous "pulling all together" and blocking the wheels alternately, the ambulance was landed on the top of the bank whence it was brought into the road again by a circuitous route. We went on our way rejoicing and soon entered the "Thorns," an arid desert about 35 miles across. Grass became less and less abundant, and rock, sand and mimosa bush the prevailing features. Kraals were still seen occasionally. The road became execrable and much more hilly and the general aspect of the country still more picturesque, continually giving hope of glorious views were one only on the summits of the table topped mountains that shut us in on every side. One object of interest was an anusually bad piece of road, where whilst on the march up with the 24th, I had been upset in an ambulance, over a little cliff some fourteen or fifteen feet high and almost suffocated in the wreck of the vehicle. We had a hearty laugh at the recollection. Many almost equally vile places necessitated the utmost care in driving now, and frequently when deep "sleuts" or gullies crossed the road we had to obey very literally our driver's injunction to hold on. The road was singularly lonely, even Kaffirs being conspicuous by their absence. The sun was by this time very powerful but we were compelled to push on

steadily on account of finding no suitable camping ground until about 8·30 we stood on the banks of the mighty Tugela, having accomplished some fourteen miles of our journey. The Tugela is even here a very fine river and when in flood almost appalling in its grandeur. Of course in the lower part of its course after its junction with the Buffalo it is much larger. Here it flows for miles down a very deep narrow valley arid and hot in the extreme. On one occasion the temperature was found by the late Major White 1/24th to be 118° in the shade. Such heat could only be ascribed to the sandy rocky character of the soil and the absence of movement in the atmosphere. The Tugela here forms the boundary between the districts of two great chiefs—Pagadi and Lojune. A house exists here, half inn and half farm. Its accommodation is of course of the most primitive kind. The proprietor also exercises the duty of keeper of the pontoon by which the river is crossed, and at present has much to do in that department, much to his disgust, as for government work he receives no toll. We were not long before we were ferried over by the stalwart Kaffirs who work the ferry by hauling at a rope on each side. Once over the river we halted and "outspanned." The tired mules were fed with "mealies" (indian corn) and "oat hay" (oat straw) and then turned out for a roll, grazing being out of the question in the absence of grass. We human animals set about breakfast, which is a right royal meal in the wilds. For a meal that is thoroughly enjoyable give me an alfresco breakfast in South Africa. One sits down to it with an appetite that one never knows in a breakfast room in England. In this case Much and myself were obliged to eat it within the ambulance because of the hot sun. Our fare consisted of coffee made over a fire of mimosa branches, bread from the Gordon Mission, butter with which the kind thoughtfulness of Mrs. Dalzell had provided us, strawberry jam and sardines that had accompanied me many thousands of miles. We enjoyed it thoroughly, and after about three hours' halt moved off again glad to get away from the almost insupportable heat of the Tugela valley. From the Tugela we had for miles a long weary ascent along a road in fearfully bad condition, but through magnificent scenery that amply atoned for the mightiest difficulties of travel, glorious mountains, peak after peak as far as the eye could reach and the gorgeous African sun lighting up them all. For some miles we made the circuit of a magnificent amphitheatre, perhaps fifteen or twenty miles in circumference, the road bending round about half of it. On our right rose scarped cliffs of varying height and on our left fell away a pricipice, almost perpendicular to a depth in many places of not less than a thousand feet. At its foot stretched for miles the arid plain that formed the arena of the ampitheatre, but scantily diversified with huge rocks and stumpy mimosa bush. Terrace after terrrace of rocky mountains shut in the wild grandeur of the scene. But life is not all poetry and the mountain beauty of the road involved my trudging wearily along behind the waggon bearing a stone wherewith to block the wheels at intervals of about ten yards. This was the only way in which we could urge our poor patient mules up the steep ascent. The continuous crack of the whip also disturbs one's calm contemplation of the scenery. Nor is an abrupt stoppage on the edge of a precipice with imminent danger of falling headlong conducive of tranquillity of mind. Such an adventure we had. An unusually stiff ascent had tired our patient little mules terribly, and Much and myself were marching in rear probably as much on account of our own precious necks as with a view of saving the mules. I was according to my wont blocking the near hind wheel, Jonas the whipper was leading the mules, Brand was lashing the said animals, Much was a few yards in rear, and Conroy had seen fit to go on miles ahead. A large hole lay in the centre of the road. Mr. Jonas wished to avoid this Scylla and in so doing fell into a worse Charybdis indicated by a combined yell from all concerned. Having come to a dead stop we had leisure to survey the situation which was not satisfactory. On our left descended a very steep slope dropping almost perpendicularly to a depth of about 700 feet. Both near wheels were over the crest of this and sunk in crumbling earth which was threatening to give way every moment and allow the whole affair to topple down. The ambulance was tilted over in a most suggestive manner, and the mules quite unable to move it. Curses loud and deep were launched at the head of the unlucky Jonas who really was not much to blame, as he had not three inches to spare on either side. We once more divided our forces and after a rest commenced operations. Much wielded the whip, Jonas pulled at the leading mules, and Brand and the writer got below the ambulance and hoisted at the near wheels. We neither of us liked our post which involved much danger to our necks, any movement threatening to upset the ambulance in which case it would have been impossible to get away from the crumbling foothold that we with difficulty maintained, and we must infallibly have gone down the cliff as the advanced guard of the ambulance. As that catastrophe appeared more and more imminent we struck work after about ten minutes fruitless labour and sat down to meditate upon things in general. Suddenly some one remembered that we had passed a band of Kaffirs but a short time before. We sent Jonas off back along the road at full speed, and having made the ambulance as safe as possible by blocking it with stones, sat down to await his return. In about half an hour he shewed up with a score of sturdy Kaffirs who very soon shouldered the ambulance into the road again, and we resumed our weary progress of stages about ten yards in length. It was late before we reached the summit of the plateau that intervenes between the Tugela and the Mooi. There, on a rocky bit of flat ground, we outspanned for about an hour our poor mules here and there finding a little grass between the stones and enjoying the luxury of a roll which seems to be the greatest of earthly joys to a mule. "Trekking" again, our road to the Mooi although very rough being fortunately all down hill we progressed very well and about seven p.m. reached the banks of the river, having accomplished a "trek" of thirty miles, a very long distance for such a country. There we found another pontoon house, and quartered in it Huntly and Smith-Donien, two sub-directors of transport supervising that part of the road. Mr. Conroy had arrived before us in a very footsore condition. After interchange of salutations with Smith-Donien and Huntley, the latter piloted us across the river. He is a cape man and happens to speak Dutch. He greatly amused us by, in the excess of his zeal, addressing in that language not only our Griqua driver who, however, understood English perfectly, but also our Zulu boy and Conroy the Irishman who met him with a look of blank amazement and an exclamation of "What is it you say, sur?" We halted for the night on the other side of the river, turning the mules loose much to their delight. Then after a wash we lighted a fire, set Conroy to cook the dinner, and, having changed our helmets for glengarrys, took a stroll up the river. We noticed the "drift" or ford over which a month before I had ridden with Colonel Glyn and poor Melvill little thinking that ere long one of them would meet his death in fighting his way across another river to save the honour of his regiment and country. On our return, dinner was ready. It consisted of a savory stew composed of Canadian preserved meat and preserved vegetables boiled together. It was very good and I did full justice to it. Much was knocked up and could not eat well. A few Kaffirs came round us and I had an amusing chat with the rable gentry, whom I plentifully rewarded with soup and bread, whereat they expressed intense delight by rubbing the abdomen much and vigorously. About nine we wrapped ourselves in our blankets and went to sleep. Much would persist in rousing about every half hour under the delusion that it was 4 a.m., but excepting that little drawback we had a pleasant night. For some unknown reason the ambulances are open back and

front, which is somewhat unpleasant in windy weather. However, these things are trifles in Africa. About half-past three my travelling companion roused us all, and after coffee we were on the move as soon as it was light, and after another 14 miles hard work with the mules, we emerged from the "Thorn Country," and once more beheld civilization in the shape of a frontier inn kept by a man named Bunup, who is an old Etonian, but apparently quite happy as an inn-keeper just on the boundaries of civilised land. There is no other house within miles. Outspanning there for a couple of hours we sat down to an excellent breakfast in the inn, which considering it was the only good meal we had tasted for six weeks, we enjoyed amazingly. About nine we moved on again but had only got half way up a hill some two miles from Bunups, when our mules who were in a dreadfully exhausted condition at last gave way altogether, and came to a dead stand. We turned them loose for about half an hour, and then with the assistance of several Zulus with difficulty got over the few yards remaining before the summit of the hill was reached. Beyond this the road was a steady decent and we progressed, although slowly. The country was here very different to the Thorns. Although hilly it was not nearly so rugged as that we had passed through, and was covered with grass. Buck were to be seen occasionally, and twice we saw an ostrich. Patches of cultivated land were very rare only at intervals of miles. We were anxious to get along as rapidly as possible as clouds were gathering fast, and we knew what a Natal storm means. When within about four miles of Greytown, however, a terrible tempest came on. The rain came down literally in sheets, and thunder, lightning and wind vied with each other in fury. When the storm burst upon us we were decending a hill. We pushed on to its foot opposite which was a sharp ascent, but there found our way barred by a furious torrent which tore down the valley between the two hills and swept over the side of the road in a foaming cataract. To go through it was impossible, and as the storm was increasing its width every moment, we tried to retrace our steps. That, however, was equally impossible on account of the slippery state of the road, which afforded no foothold for the mules, so we covered under the tilt of the ambulance and patiently waited the end of the storm. The roaring torrent soon reached our wheels, surrounded us and went yards up the hill beyond us. The scene beggars description. Debris of all kinds came down the foaming current and piled up against our wheels until we thought we should be overturned. The rain defied our frail tilt and flooded the ambulance in every part. The best idea of the fury of the storm will be gathered when I say that in a space of a little more than half-an-hour from its commencement a track of road previously quite dry was swept by a rapid river which Major Much and myself both agreed was fully thirty yards wide and probably about five or six feet deep in the centre. The rain was succeeded by hail. The stones as large as gooseberries, battered our poor mules so dreadfully that our men were compelled to wade into the stream and unyoke them lest they should overturn the ambulance. After lasting about three quarters of an hour the storm ceased and in about half an hour longer we were able to cross with difficulty the diminished stream. But we found it quite impossible to get our mules a foot up the slimy ascent on the other side. What was to be done? We were more than three miles from Greytown, and it was three o'clock in the afternoon. We at last decided to send Conroy on to obtain help, if possible, and waited; but shortly after. wards, having in view the fact that we were wet through, that the ambulance was soaking in every part, and that the prospect of getting it into Greytown that night was slight, Major Much and myself decided to follow him in, leaving Brand with the waggon. Our progress resembled skating rather than walking, and at several places we had to wade through streams that crossed the road. As I had long riding boots I did not care much for these until we had to cross one which was much too deep for the boots to be any protection. It was, however, necessary to go straight through them, and at last we reached a wide stream close to Greytown, usually easily fordable, but now too deep to cross except by swimming. Proceeding up the stream a few hundred yards we crossed it by a one plank bridge which some provident farmer had thrown across. We were then in Greytown and found that help was about to be sent to our ambulance. We soon made our way to our comrades of the 2/24th then in Greytown, and had a hearty welcome from Major Black, Surgeon Reynolds (the Rorke's Drift hero), and many others who were delighted to see us safe, and overwhelmed us with offers of dry clothes, slippers, etc., so that we were speedily made comfortable. Our ambulance was brought in the next day.

W. D. HARTLEY.

ON A NEW FORM OF SUSPENDER WITH CROSS-PIECE.

Of the numerous appliances in the Treatment of Surgical Diseases, few, if any, have undergone so various, so remarkable, so useless a series of modifications as the Suspensory Bandage. A morphologist of no mean capacity would be required in order to trace the cycle of changes in the course of development of this contrivance—from the simple girdle of calico and handkerchief-support, to the elegant pink network of silk which forms one of the most attractive curiosities on view in the Surgical Instrument Maker's shop window.

That a well-fitting Suspender is a desideratum no careful surgeon can deny. In the more chronic affections of the cord and testicle the want is clearly felt, and perhaps in the Palliative treatment of Varicocele the efficacy of well-directed continual pressure and support would be best demonstrated, whereby the veins are brought under an influence analogous to the action of muscles capable of pressing on veins in their immediate neighbourhood, and also whereby the immediate length of the column of blood extending from the "Pampiniform Plexus" to the "Renal Vein" or Inferior Vena Cava is diminished.

Mr. Bryant, when lecturing at Guy's, remarked that the simpler the contrivance to effect these conditions the better, and recommends a calico belt and handkerchief slung across after the fashion of a diaper.

Mr. Durham, in his course of lectures, regarded suspenders as far more likely to do harm than good, because of their slipping and causing more or less strangulation of the parts.

Undoubtedly there are powerful objections to most of the appliances in daily use. If a handkerchief is merely slung across as just stated, the scrotum will to a certainty slip out on one or other side of the handkerchief.

If the Triangular Suspender as depicted in most of our Manuals of Surgery be employed, in addition to the ponderous mass which must be carried about, is the inconvenience arising from the fact that micturition cannot be performed unless the bandage in undone.

With respect to the Surgical Instrument Maker's chef-d'œuvre, such costly attire is not within the reach of the working-classes, neither does this apparatus retain its normal position, but slips forwards and becomes only a source of discomfort, or if the proper position is maintained there is frequently an unpleasant irritative cutting of the skin produced.

The contrivance to which I would invite attention appears, in principle, tolerably satisfactory. I will endeavour to describe:—Three pieces of bandage are necessary. One of calico to encircle the waist, which for the sake of clearness we will name the "Enceinture." Two pieces of flannel bandage united by their centre cross-wise. One piece of flannel passes from behind forwards, and is named the "Perineal Band." The other piece of flannel bandage is stitched at right angles to the first, and is named the "Transverse Band. So much for the material.

In order to construct one, take a piece of calico-bandage of sufficient length to encircle the waist and cut a horizontal slit in the centre. Then, take two pieces of flannel-bandage of which one should be broader than the other. The breadth of the one, say three inches, that of the other four inches. The Transverse Band should be the broader, in order to form a sufficiently large receptacle for its contents. One end of the first piece of flannel (the Perineal Band) is passed through the slit in the Enceinture and fixed by tying it in a knot. The Enceinture may now be tied on, the Perineal Band brought across and rolled round the Enceinture in front. A vertical slit is now made in the Perineal Band corresponding to the position of the Penis. Remove the apparatus again.

The second piece of flannel (Transverse Band) is now stitched by its centre to the Perineal Band immediately behind the slit for the Penis. The apparatus may now be applied.

Thus, the Enceinture is tied in a knot and so fixed comfortably. The Perineal Band is brought across and the end rolled round the Enceinture in front. The two ends of the transverse portion are now rolled around the Enceinture, one on either side of the Perineal Band, and the bandage is *in situ*.

It will be seen that rolling the flannel round calico is more advantageous than tying in knots, especially as the flannel winds round and clings to the calico.

Micturition can be readily performed whilst wearing the bandage, but it has more than once been objected that defæcation is impossible and hence that the posterior half of the Perineal Band should be slit in two, each half passing along the corresponding gluteal fold. I am confident that difficulties would only arise and that one or other of the portions of flannel would slip into the fissure between the nates. Surely there can be no more trouble in unrolling the flannel from the Enceinture than removing other articles of clothing out of the way. The Enceinture need not be untied.

The two valuable points about the bandage appear to me to be

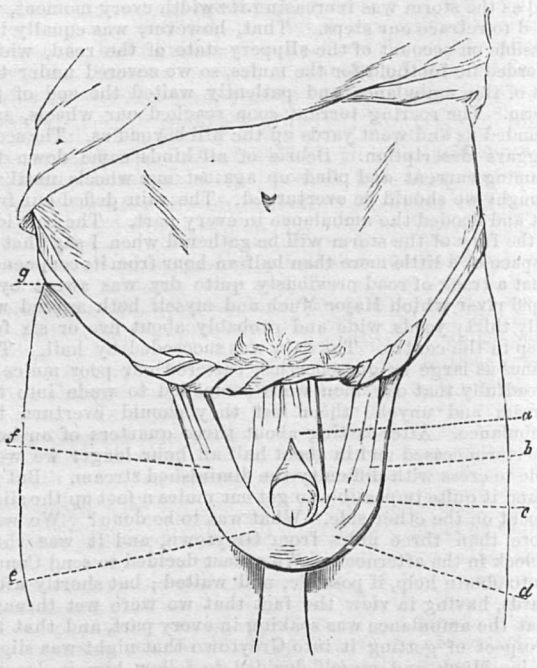
1st.—That the bandage will remain in position for such a long period of time when the patient is moving about in any direction, whether sitting, stooping, kneeling, walking, or other of the variety of movements gone through in the course of the day, and

2nd.—That pressure can be applied to one or other testis, or cord and neighbourhood of inguinal canal.

I am anxious that the object of this bandage should be thoroughly understood. Lying in bed with malignant disease, acute or chronic orchitis, or with any allied affection which necessitates the recumbent posture, one does not want more than is absolutely necessary, a pillow or a handkerchief will usually suffice. But it is in the "Palliative Treatment of Varicocele," and where patients have to walk and be on their feet from eight to ten hours a day; it is in hot weather and in warm climates; in our foot regiments, where we know there is so much strain on the vascular system, and in a hundred other conditions which are too obvious for comment, that a simple, but effectual, and economical bandage is needed.

I have appended a diagram and described the Suspender and will now leave them both for criticism and trial.

T. B. CROSS.



a—Perineal Band. *b f*—Transverse Band. *c*—Penis.
d—Left Testis. *e*—Right Testis. *g*—Enceinture.

GUY'S ATHLETIC CLUB.

A general meeting will be held in the Anatomical Theatre, on Wednesday, May 7th, at 12 o'clock.

R. Clement Lucas, M.B., F.R.C.S., in the Chair.

First and second years men are particularly requested to atend.

Edwin Roper, Hon. Sec., 1878.

Correspondence.

The Editor wishes it to be distinctly understood that he is not in any way responsible for opinions expressed by Correspondents.

To the Editor of the "*Guy's Hospital Gazette.*"

Sir,

Both the "Gazette" and "British Medical Journal" having lately called attention to the deficient means of isolation at Guy's, may I therefore ask you to give an instance of the practical result of this deficiency. There is at Guy's but one room apparently, in which noisy patients can be placed, when it is necessary for the quiet of the others that they should not be kept in the wards. This room contains several beds, and has lately been twice occupied by both a male and a female patient at the same time under the care of one nurse. Thus on April 11th, a female in a state of acute mania and a patient admitted during the night were for some 12 hours in it. After the removal of this male patient a second male in a state of Delirium Trement was sent down to keep the old lady company, and for several days they occupied the room. It is currently reported about the hospital that the old lady (doubtless for the edification of her male neighbour) took to dancing about in a state of nature; but perhaps this may be a libel.

It may be said that these are isolated cases which only occur very rarely. This may be so, but the point is that they *never* would occur were the means of isolation as it should at so large a hospital.

Obediently yours,

A SENIOR STUDENT.

The Presidents of the Physical Society acknowledge Subscriptions to the *Gazette* from the following gentlemen:—

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We should like to remind some subscribers that they have not yet paid this year's subscription.

CARDIAC REMEDIES.

The idea that there is one drug which will counteract or cure a certain diseased condition of the body, appears to be one inherent in us from our veriest childhood. As we grow older this idea is confirmed and strengthened, for we are accustomed to hear the family practitioner say, "I'll give him *something* which will soon set him quite straight." Sometimes, it is true, we did not get well so quickly, perhaps we even became worse, but still we looked upon the doctor as a man of nostrums. We take this idea with us on entering a medical school, and the more enthusiastic of us, who join the medical profession because we hope to become benefactors to our suffering fellowmen, are soon bitterly disappointed to find that very little comparatively is said about the action of medicine, the great means, as we thought, of giving relief.

We see, however, a course of Lectures on Therapeutics announced in the prospectus, and we go to the first lecture confident that we shall recover our confidence. In 1875 the opening lecture was given to dispel these pleasing delusions, and we left the theatre with the following conclusions forcing themselves on our horror-stricken mind:—"The state of medical thought in this day is very much what it was in the days of Galen and Hippocrates." "A doctor's problems more often concern the immaterial than the material part of the patient." "A steady process of induction is what we want; such inductions as Quinine cures Ague, and Iodide of Potassium cures Tertiary Syphilis."

Against the last of these conclusions nothing can be said; logically, a conclusion arrived at by induction is established. But further on we shall see how it depends chiefly on experience, and that its application consequently is limited.

But to admit the first conclusion as correct amounts to saying that we have been travelling in a circle for the last 2000 years, while the second one leads to a train of thought such as this:—Since we undoubtedly treat our patients more successfully now than physicians did in the middle ages, we must do so by a more cunning treatment of the weaknesses of human nature, a sort of spiritualism, in fact, because, "A doctor's problems more often concern the immaterial than the material part of his patient." This is again travelling in a circle, for the witchcraft of the middle ages, and quackery of the last century, are but coarser impressions on the immaterial. This seems, however, to have been revived of late years, for the metallo-therapy, and potato-therapy, and the use of carrots and bits of wood, are not a whit less absurd than black snails and doves' dung.

It would appear then, that our teachers are anxious to warn us against a too enthusiastic belief in the power of medicines. At the same time the broad and

easy road of scepticism lies invitingly open, and the too-suddenly damped ardour may project us bodily into it. There is a way, however, between the two, a slope in easy gradations, and it is called *Empiricism*, but some prefer to call it "*Clinical Observation*." It is crowded with the great surging mass of our profession, and is provided with terraces at various levels upon which some have taken a permanent stand. The descending stream is by far the greater, and more numerous in the upper than in the lower half of the way. A few, and they are the real workers, are toiling laboriously upwards much hampered by the contrary stream. A noticeable fact, also, is that the bookstalls in the upper two-thirds of the way are crowded with books, the results of observations made by the descending many who are told, when they are getting ready to start, to put down everything they see. They do so, and heap their observations up anyhow, arranging them in no order at all.

These books are as cheap as they are plentiful, in fact it is customary for their compilers to present one *gratis* to each bookstall as they go down; those at one stage borrow from the one higher up, and so the books become thicker. On the other hand, the *workers* have their ears dinned by the discordant voices of the crowd, but they investigate as well as notice the facts by the way; their books are small and few in number, and fetch a good price.

There are two methods, then, of studying Therapeutics:—

(1) *The Method of Clinical Observation.*—Giving the remedy to a sick person and watching any alterations in symptoms.

(2) *The Experimental Method.*—By experiments made on animals under varying conditions.

The first method is the old and tried one; it is the one adopted by the many described above. With the exception of the discoveries made during the last twenty or thirty years, all our current theraputical knowledge has been gained in this way.

But what has it established permanently and indisputably? Scarcely anything beyond the primary facts that Quinine will assuage an intermittent, that Salts will purge, and that opium will allay pain and lull to sleep.

By an eminent authority this method has been compared to a rifleman learning how to shoot by practising only at dusk when he cannot see his object clearly. He might go on practising for ever in this way without making any improvement, for when he missed, he would never know whether it was because he had not seen his mark properly, or had not aimed steadily at it. The Clinical observer has been practising away at the disease called Rheumatism for hundreds of years, and we turn to the most popular of works on Therapeutics to find the case, the result of all this experience. No less than twenty-six different remedies meet our enquiring mind, truly a Babel of discordant voices. Neuralgia, too, gives a list of thirty-three medicines!

It seems as if the "Empiricist labels the disease with a name, puts into the patient's body the remedy for that disease, and lets them fight it out." (Anstie.)

The method of giving a remedy to a sick man in order to find out its effects, is irrational; for the conditions under which we are using the remedy are too little known to enable us to draw any certain or definite conclusions as to its precise mode of action.

In the next article I shall endeavour to show the advantages of the Scientific and Experimental Method, and exemplify it by the action of certain drugs on the heart.

LENDING LIBRARY FOR THE NURSES.

We are requested to make it known that an endeavour is being made to form a library for the benefit of the nurses. This effort is one worthy of all commendation and we are glad to be able to assist it in any way by making it publicly known. The Chaplain and the Sister of Ruth ward will thankfully receive any books, or money to be devoted to the object.

NOTES OF THE MONTH.

George Hales Parry, L.R.C.P., & L.M. Ed., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer and Public Vaccinator to the Saethsham District of the Docking Union.

"When you are treating Delirium tremens let your watchword be *Repose*. Be guided by common sense and put your patient in the most favourable circumstances for sleep. Place him in the dark and keep him quiet. Don't give him opium if not necessary for it is not advantageous to give that drug until the patient is insensible. The aim is to keep the patient alive until he gets rid of the poison, and Chloral with Bromide of Potassium is often useful.

"Nothing is more common in thin hysterical females than to have your attention called to pulsation in the abdomen. This is merely that of the abdominal aorta of which the coats have probably become relaxed through relaxation of the sympathetic. Cases of abdominal aneurism are very rare in females."

"The aim of therapeutices in heart diseases is to improve the blood thus lessening the tension against which the heart has to act, it being certain that the interchange between blood and the tissue goes on more easily when the latter is in good condition. For this reason give Ol Morrhuœ and preparations of iron with good food."

The various effects of opium on different men and animals are interesting—"Some men by habit accustom themselves to enormous doses, others are killed by a few minims. Pigeons can't be poisoned by it, and high bred horses are only excited by its influence. Dogs are equally excited and narcotised by its influence, while children under a year old are so readily susceptible that it is not safe to give them more than $\frac{1}{4}$ or $\frac{1}{2}$ drop of the tincture to begin with."

GUY'S HOSPITAL GAZETTE,
MAY, 1879.

CLINICAL LECTURE.

By MR. HOWSE.

DEATH FROM THE USE OF ANÆSTHETICS.

Patients may die from nerve-shock during the performance of an operation. This was not a very uncommon mode of death before the discovery of anæsthetics. It was one which brought great discredit upon operative surgery and inspired great fear of "operation" in the minds of the public—a fear which still exists, though happily now much abated. But it is probable that patients still die of nerve-shock even under anæsthetics, though the frequency of such deaths is much diminished. Still it is not unlikely that some of the so-called chloroform deaths are really deaths from nerve-shock, and not due to the anæsthetic at all. For example, in the first case in which Sir James Simpson had decided to try the experiment of giving chloroform as an anæsthetic to the human subject during operation, he was unavoidably prevented from attending at the time agreed upon. The surgeon in attendance (Mr. Syme), therefore began the operation without any anæsthetic being administered. The operation had hardly commenced, the first incision was scarcely made, when the patient fell back and died. This was a death from cerebral shock, from fright and pain, and probably from other causes. Now, if chloroform had been administered in that case, and the patient had died, as it is certainly probable he might have done, everybody would have set down the death to the anæsthetic. Sir James Simpson would have been afraid to give it in any second case, and thus probably a most beneficent discovery would have been lost to the human race. Hence not all the deaths which take place during the administration of chloroform are due to the anæsthetic, though it is very difficult, if not quite impossible, to distinguish the one class from the other.

Comparing the three most frequently used anæsthetics with each other, Mr. Howse said that nitrous oxide gas was not available as a good anæsthetic for the general run of surgical operations. Its effects passed off too quickly. Judging from his own personal experience, the pain of many operations did not consist so much in the *absolute cutting*, if that were quickly done, as in the after pain. In his own case this after pain came on about twenty or thirty seconds after the incision had been made, and then endured very severely for about ten minutes. Now, if nitrous oxide gas had been administered, its effects would have completely passed off long before the period of cessation of this after pain. Hence for most surgical operations we require an anæsthetic, the effects of which shall be more *enduring* than those of gas. Both chloroform and ether possess these more enduring qualities.

Comparing these two latter anæsthetics together Mr. Howse expressed the opinion that though chloroform was more dangerous in its administration during the period of anæsthesia, yet that ether killed quite as many patients in reality from its after effects. For example, he had lost one patient from excessive vomiting after ether. This death he could attribute to nothing but the ether, the patient having taken an excessive amount, and fortunately not having been given a single drop of chloroform. Another case had been lost from bronchitis following the ether administration. And he had seen several other cases in which the pulmonary irritation from ether was so severe as to interfere very materially with the patient's subsequent progress. Neither of the above mentioned cases were recorded in the death certificate book as "deaths from ether." They were respectively entered as deaths from "vomiting after operation" and "broncho-pneumonia following operation." Thus in the statistics of anæsthetics the ether escapes its due share of responsibility. And this was probably the reason why such favorable statistics were published of ether as compared with chloroform. It rested upon the fact that the dangers of chloroform were *during the operation*, while those of ether were *in the few days succeeding it*. Hence we had an explanation of the American statistics. Ether is given, an operation is done, the patient dies two days after it,—say of broncho-pneumonia. In this case the operation gets the blame, or the broncho-pneumonia is supposed to be pyæmic; and thus the ether escapes the well-deserved censure, which ought to be apportioned to it. Mr. Howse, therefore, could not join in the ill-advised outcry, which many persons in the profession were attempting to raise in favour of ether at the expense of chloroform. They were both of value as hand-maidens of each other. Each case had its appropriate anæsthetic, or combination of anæsthetics. And if, yielding to a senseless cry, we permitted ourselves to taboo one of these, we should lose the help of one great engine of Surgery, the loss of which we should afterwards repent. In childhood, for instance, he had never seen any appreciable risk induced by the inhalation of chloroform, except in one case, where by a curious idiosyncrasy, the patient seemed to suffer considerable risk, not from chloroform alone, but from each anæsthetic which was tried in succession.

Deaths from chloroform are usually attributed either to—

1.—Direct poisoning of the brain and nervous tissue.
2.—Heart (Syncope).
3.—Lung (Asphyxia).

For many reasons he should be glad to exclude the first from consideration. Very little was known about it, if indeed it existed, as a cause of death at all.

As regards the second, it was probable that in galvanic acupuncture of the heart we had a means of keeping up the circulation, for a time at least, after its failure. In the case which formed the subject of the lecture, the first thing which excited alarm was apparently the sudden failure of the circulation. The vessels of the cut prepuce (circumcision was being performed) suddenly ceased to bleed. The pulse could not then be felt at the wrist, nor in the femoral artery. At the suggestion of the Surgical-registrar, Mr. G. A. Wright (to whom his thanks were due), the battery was sent for, and galvanic acupuncture of the heart performed,—this being the first time he had ever had occasion to do this operation. It was then noted (and this was verified by several of the by-standers), that though the pulse was quite imperceptible before the current was applied, distinct pulsations were perceptible for a considerable period afterwards. For other reasons, life could not be preserved, but in suitable cases—where the failure of the circulation was really due to Cardiac Syncope—it would seem as if we had in acupuncture a really valuable means of whipping up the circulation after it had failed.

As regards the third cause of death, by Asphyxia, this was certainly the one most amenable to treatment, and which ought most to be avoided. In artificial respiration we had an almost perfect means of remedying the failure of natural respiratory power, and keeping up life until the natural efforts could be resumed. But it was of little use performing artificial respiration unless there was a clear gangway for the passage of air into the lungs. Hence the value of tracheotomy in all doubtful cases such as these. Within the last two years, in two of his cases, tracheotomy had saved life, the obstruction being due to laryngeal spasm. Hence, too, he had done tracheotomy in this case; not because he had thought the case one of primary lung obstruction, but in order to get a clear passage into the lung through which the air would pass, without being involved in the complications of the tongue, mouth and larynx.

Mr. Howse further showed that though he had himself, from the facts observed at the time of the operation, regarded the death as being due to primary failure of the heart's action, and that though the same view was taken at the post-mortem, from the facts observed in the body, yet that a careful consideration of, and reasoning on, *both series of facts combined*, proved almost conclusively that death resulted from primary lung mischief. He, moreover, suggested that many of the cases which are now returned as deaths due to primary cardiac failure, are in reality deaths from the lung, and he indicated the line or reasoning which led him to that belief. The importance of this view lay in the probability that these cases would be much more amenable to treatment when their pathology was thoroughly understood.

SOME CASES OF GENERAL PARALYSIS OF THE INSANE, AND OTHER FORMS OF INSANITY.

BY HENRY DAVY, M.B.

(*Continued from page* 29).

Case 1 then may be said to be a typical case of General Paralysis.

We have exalted delusions with slight loss of power passing on to dementia and complete muscular debility and terminating, as is so frequently the case, in an epileptiform attack. We have, too, all the less distinctive features of the disease present, the unequal pupils, tremulous tongue, peculiar writing, altered expression, greasy skin, and undecided pronunciation, marking off this case as clearly as if it had been composed to do duty for a text book. It is because most of our ideas of disease are thus learned from text books that we experience such difficulty when nature puts before us some more obscure and common form of the malady which we have read of, and hence we may as well give one or two less typical cases than the one we have just considered.

CASE 2.—W. W., æt. 23, married, was admitted Nov., 1878.

History up to Admission.—Patient, a glazier by trade, has always been a sober man but has lately had much worry in his trade, to which his illness is attributed. He has been ill ten weeks. The certificates state that a complete change has lately taken place in his natural disposition. He has become moody, silent and suspicious of everybody, thinking that the police are after him. Wandered away from home and came back after some days half starved. His temper has become very irritable, and he has once threatened to strike his wife.

On Admission.—Patient is a well nourished man, with a sallow complexion, and a blue line on his gums. Has never had colic or any other symptoms of lead poisoning. Looks depressed and careworn.

Immediately after admission he settled down quietly and helped in the ward, and became a little more cheerful, he did not, however, care to associate with the other patients, and always looked dull and depressed. After he had been in nine or ten months, he tried to commit suicide in his bath by keeping his head under water and drinking the water copiously. The following notes may be taken as shewing the progress of the case.

Sept. 28th.— Two days ago it was noticed that he did not take food well and he complained of his bowels being confined. To-day he has a dull listless heavy look, and expresses disinclination for food; staggered when he rose from the chair, but could walk well with his eyes shut, although his gait is uncertain when his eyes are open, his grasp is as feeble as a child's, pupils equal, broke out once or twice into an unmeaning laugh.

Dec. 23rd.—Patient is very unsociable, has a dull vacant expression and his habits are very dirty. He does not sleep well, his tongue is tremulous, his speech drawling, but his pupils are equal. He has no delusions that can be got at, except that he always says "I am quite well" when asked as to his health. Is to go out as his term of probation is up.

Dec. 24th.—Told me to day he was going out, and that he has had a legacy left him. Asked of how much, he said £20,000.

Dec. 27th,—Patient got up at 7·45 a.m. this morning apparently in his usual health. Whilst dressing he fell down in a fit and Dr. Mickley saw him, "He was then on his bed and all his limbs were violently convulsed, while the facial

muscles on the right side were twitching violently. His breathing was stertorous, and he took no notice of anything."

At 9 a.m. the convulsions of the limbs had ceased but the facial twitching continued. His breathing had become quieter; eyes open and turned up to the left, conjunctivæ insensitive. He is quite comatose, and the twitching of the face is not continuous, but comes on at short intervals, when the lividity is much increased. He was put on a water-bed, mustard poultices, were applied to the calves of the legs and epigastrium, and the back of his neck was blistered.

2 p.m. Patient in same condition, temperature 101·8°. Pulse very quick and feeble, was made to inhale 5♏ of Nitrate of Amyl poured on a piece of lint, no effect was produced.

2·30 10♏ of nitrate inhaled, at first the muscles of the face ceased to twitch, and then in about 5 minutes he became generally convulsed and livid.

9·30 p.m. Patient comatose, twitching of facial muscles continues, Temperature 102°, occasional short fits.

Dec. 25th.—9 a.m. is in same state, temperature 102·4°, fed through nose.

9 p.m. Breathing stertorous, otherwise in much the same state; temperature 105·6°. 7♏ of Nitrate of Amyl inhaled without effect.

Dec. 29th.—10·30 a.m. Pulse hardly perceptible and very rapid respiration 52 per minute. Lips blue, face dusky, twitching, on right side less intense. Left eye conjunctivæ congested, cornea not clear, pupil extremely contracted, much smaller than the right. No urine passed last night, but some was passed this morning. Hypogastrium quite resonant. Turned over on his side to examine his sacrum, his breathing ceased, he became livid, and only regained his breath with the dorsal decubitus. Over his sacrum was found a large patch of dusky discolouration, extending also over the left gluteal region. Fed through the nose.

5 p.m. still comatose, pulse imperceptible, twitching of right side of face less. He moans frequently. Both conjunctivæ congested, cornea clouded, probably from irritation of dust falling on them so they were protected. Hypogastrium resonant. Fed through the nose.

Patient died at 7·15 p.m. The post-mortem examination was made 16 hours after death. Air moist and cool.

Rigor Mortis.—Well marked. *Decomposition.*—slight.

Lungs.—Both apices were adherent behind, this being especially marked on the right side. *Bases* were airless, sinking in water, congested and rotten. No signs of recent pleurisy or pneumonia.

Stomach, Liver, Testicles, Spleen, Larynx, Aorta, Heart and Oessophagus.—All normal.

Kidneys.—*Right* weighed 6 ozs. capsules non adherent, congested but it was questionable how far there was any structural change. *Left* weighed 10 ozs, capsules adherent, contained a very large number of cysts varying in size from a pea to a hazel nut. Some of these were filled with a limpid fluid, some a treacly-colored colloid material. The secreting structure was not otherwise visibly affected.

Brain.—All the vessels on the surface and throughout the organ were very congested, and the brain tissue was particularly firm.

Dura-mater.—Appeared normal. *Visceral Arachnoid.*—opaque in parts. *Pia-mater.*—Appeared normal and stripped off readily in every part. *Cerebro-spinal* fluid in the ventricles, &c., normal in quantity.

There was no effusion of blood anywhere. The grey matter of some of the convolutions appeared thinned, and the outer layer of cortex stripped off readily.

CASE 3.—F. McD., æt. 31, admitted March 29th, 1878.

Family History.—Very good, one out of fifteen brothers and sisters died of Phthisis but there is no other trace of Phthisis in his family or its branches. No trace of insanity in the family, and they are all very abstemious.

Personal History.—Was formerly a linen-draper's assistant, but for the last ten years he has been an actor, acting mostly in the provinces, and in London as "heavy man" occasionally. He has worked very hard in his profession and has at times been very excited about it. Has lately had a good deal of anxiety in connection with a provincial theatre. Has had no blow or injury of any sort. He is very abstemious.

Five months ago whilst carrying out an engagement at a provincial theatre he was "suddenly seized" and fell down in the street. He was sent to Guy's and attended Dr. Fagge's out-patients. At this time he staggered in his gait, and his speech was thick, but his friends never noticed any mental peculiarity. After this he was for two months in St. George's and here he had delusions—thought the houses near used to move down to the sea every night, and that people were acting in his room. He was then at home for a time with the same delusions. Does not sleep, but eats well.

On Admission.—Patient is clean, and there are no bruises about him. He talks thickly and slowly, but his pronunciation is otherwise normal. His tongue is very tremulous when protruded. His pupils are unequal, this being markedly seen at night when they are dilated; during the day they are both much contracted, and the difference is not so evident, They re-act normally to light. Skin is not particularly greasy, and his heart and chest sounds are normal. He carries on quite a rational conversation and appears to have no exalted delusions of any sort. Tells one when questioned as to his monetary arrangements quite calmly and rationally and talks quite sensibly about acting and the pieces he has appeared in. Says he has acted in the provinces with most of the leading actors of the day, and that he would take some such part as that of Iago in Othello. He recites pieces from Othello and other plays quite correctly and fairly well, but the thickness and slowness of speech mars the effect.

He is very anxious to get well and to take medicine, so he is put on Tr. Card. Co. and aqua, whilst his temperature and pulse tracings are observed.

April 8th.—Patient settled in well, is happy and comfortable, and very anxious to get well. Usually he carries on quite a rational conversation, but at times he is suspicious and looks round anxiously for some one who he thinks is following him. He thinks a man called Jameson has committed a murder, and is always following him and he tells me in a confidential manner, "Jameson is here, hush! don't tell." He tells me his illness is due to anxiety which he had at the provincial theatre. He states the delusions which he had at St. George's, but he says they are quite true. Given Tr. Physostigma ♏ xx t. d. ex. aqua.

April 17th.—Has altered but little, though he says he feels better and he has been sleeping better lately. His symptoms are more spinal than cerebral, as shewn by his few delusions, thick tremulous speech, &c. His walk shews a peculiar staggering weakness, and his grasp with both hands is not strong. At times he is more irritable than at others, but he usually talks quite rationally. His letters are short, sensible and to the point, his writing is very fair. Judging from his face one would think it had lost some of its expression, but his relatives do not think so. His temperature had been taken night and morning since admission, we will remark on it later on, as also on his pulse tracings.

March, 1879.—This patient is still in St. Luke's and as all the well marked symptoms of General Paralysis. Unequal pupils, tremulous tongue, weakness in walking so that he cannot walk alone, altered speech, youthful expression and is in a state of Dementia. He is happy and has the one exalted delusion that he is "quite well."

The Presidents of the Physical Society acknowledge Subscriptions to the *Gazette* from Messrs. Holman, Richards, Beale, F. G. Manby, and De. W. Baker.

BACTERIA & THEIR RELATION TO DISEASE.

BY J. M. HOBSON.

If we are going to study the "Germ Theory" we must know something about Bacteria, for the development of the theory, as far as it is developed, has come about through experimental research into the life history of these organisms, not only within the body but outside of it.

That the process of contagion was somewhat after the fashion of fermentation was long supposed, but it required the discovery of Bacteria, together with Pasteur's researches into the nature of fermentation, that the foundation might be laid of any definite knowledge of the pathology of contagion. The Germ Theory, or Theory of a *Contagium Vivum*, is in direct opposition to the conception of a *merely* physico-chemical contagium and is essentially this. A disease which is contagious, or, at least, some diseases which are contagious, owe their origin in the infected individual, and their spread from him to other persons, to minute organisms which propogate during the course of the disease within the body. To understand how this can be, it is obviously of prime importance that we should know as much as we can of the natural or life history of these organisms.

I.—NATURAL HISTORY OF BACTERIA.

Cohn, of Breslau, who is the great authority on these organisms, first published his researches about five and twenty years ago; before Pasteur's work, and Hallier's theory of Contagious diseases were made known. In passing we may note that Hallier, of Jena, undertook most laborious investigations in his search after the true botanical relation of contagium, and thought he had found them in such, for instance, as a rice-plant fungus, part of whose life-cycle constituted the contagium of Cholera. Burdon Sanderson remarks,* that though Hallier's results are not trustworthy yet is is in the search after the "organoleptic" (leptos subtle) properties of bacterial life that we must hope to get at the whole truth about contagion. The meaning of which I take to be that we must acquaint ourselves with the various phases in the subtle life-circles of bacteria.

Cohn in his memoir, (Bieträge Zur Biolocig der Pflanzen, 1872) of which an abstract is given in the journal of Microscopical Science, 1873, defines bacteria as "Chlorophyll-free cells of spherical, oblong, or cylindrical form, sometimes twisted or bent, which multiply themselves *exclusively by transverse division*, and occur either isolated or in cell-families." The statement which I have put in italics cannot be taken as altogether true, for it appears that one form, at least, produces spores. The form of multiplication which is, without doubt, most commonly to be observed in bacteria is bisection across their long axis. Burdon Sanderson (British Med. Jour., 1875) gives as the product of multiplication of a single bacterium, bisection taking place at the rate of once in an hour, over sixteen millions in twenty-four hours. The new form may either separate at once or remain connected, giving rise sometimes, to long chains. In structure a cell membrane generally exists which resists the action of potash, ammonia, and acids. In size bacteria, with a few exception, are extremely small, some being not more than $\frac{1}{20000}$ inch in diameter. Most Bacteria can be observed, in some period of their life, in a condition of more or less active motion which Burdon Sanderson (opus cit.) states as most common in the red forms, to be axial, advancing or retreating, interrupted by a period of rest or spinning and to be carefully distinguished from massive movements of particles in a medium of nearly the same density. Another phase of their life-history is one of rest. They assume this state when they have exhausted the nutriment in a fluid and settled as a pulverulent precipitate to the bottom. They do not show movements either when they are in a very different state. The material which forms cell-membranes, and may be looked upon as a secretion of the active protoplasm, becomes gelatinous, and glues many cell-forms together forming what is called a *Zooglœa*. This Zooglœa forms either membranes or little masses, some of which are large enough to be seen by the naked eye. Propagation, however, goes on in the Zooglœa state.

Cohn gives a classification according to forms of bacteria. He makes four tribes containing genera and species. To us it is interesting to note how many species there appear to be, and greatly so is this, that some forms, apparently identical, are widely different in the processes with which they are associated. "In *Sphœrobacteria* we have one genus, *Micrococcus*, with species grouped as Zymogenous, Chromogenus, and Pathogenous." (Abstract above referred to). In the Chromogenous group are forms associated with the very interesting phenomena of colour fermentation of which I shall speak further on. Zymogenous means *ferment producing*, and under this head is brought a form associated with decomposition of urine. Among the Pathogenous Micrococci is M. Vaccinae which will be brought up again when I describe Sanderson's and Klein's researches. The tribe *Microbacteria* includes but one genus—Bacterium of which B. terms, the common bacterium of putrefaction, is a little rod-shaped body about $\frac{1}{9000}$ of an inch long. *Spirobacteria* includes two genera Spirochæte and Spirillum. Spirillum volutans is the giant among bacteria. Cohn has detected a fine flagellum or cilia at either end. In the genus Spirillum is the bacterium of relapsing fever. *Desmobacteria* is the tribe of filamentous forms, Bacillus and Vibrio. In Bacillus authracis, the bacterium of the terrible disease *Splenic Fever*, Charbon, or Malignant pustule, we have a bacterium which produces spores, as indeed according to Cohn is the case with all the Bacilli. This is a fact of very great interest, as we shall presently see. In the Journal of Microscopical Science for 1873 there is a plate by Cohn which will give a very much better idea of the shapes and relative sizes of Bacteria than any verbal description could give. There are also plates illustrating papers by Professors Lister and Ray Lakester in the same volume, and a plate by the latter in the 16th volume (1876). Let us now pass to what we may call the *phenomena of nutrition* of bacteria.

The fluid which Pasteur used in carrying on his classical researches in fermentation contains sugar, tartrate of Ammonia, and the ashes of the yeast plant. The cells of the yeast plant will not grow without the sugar, but Cohn found that bacteria grow best without it. Bacteria, then, can get their carbon and nitrogen with which to build up their tissues from so simple a compound as Tartrate of Ammonia. Burdon Sanderson in his second contribution on the intimate nature of contagion makes the remark that as these organisms flourish quite as well in Pasteur's fluid as in albuminous fluids it is not probable that they get their nitrogen, when they grow in the latter, from the albumen, (Thirteenth report of the Med. Officer Priv. Coun.) Not having Chlorophyll, bacteria are unable to decompose Carbonic acid, but they can get their Carbon as we have seen from Tartrate of Ammonia. Let us now see the relation of bacteria to putrefaction. It is now admitted on all sides that if, with some rare exceptions, organic liquids have first been subjected to a temperature of sufficient intensity (140° F. will do) to destroy the organisms they may contain, and are then shut off from all contamination, they will remain perfectly sterile for an indefinite time. The results of Sanderson's researches in 1870 (op. cit.) are that *microzymes* (minute ferments), as he then called them, do not exist in the air, as such, but do exist in all water, mineral and distilled,—such as is ordinarily in use—and on any surfaces containing any degree of moisture. He found that cotton-wool was an efficient filter both against bacteria and the spores of fungi. His mode of experimenting was to have test-glasses first heated, and when cooled, filled to a

*Appendix to Twelth Report of Med. Off. Priv. Council, 1869.

certain level with Pasteur's fluid, and immediately plugged with cotton-wool. Here the fluid might stand, till he wanted to experiment, unaltered, but if he put a drop of ordinary water into it, or simply touched it with an unpurified glass rod, before long, bacteria would swarm in it.

We know that Dr. Bastain is the great opponent of the Germ theory, and we know that he claims to have proved a spontanous generation of organious under just the above quoted conditions. He boils his animal and vegetable infusions, seals the flask while boiling, and in due course gets his organisms. These opposite results have not been generally admitted, and, before going into the literature of the subject, I had myself supposed that the reason was that others had not got Bastain's results and had attributed *his* to errors of manipulation. I have, however, met with the following facts. Dr. Roberts, of Manchester, points out that the spores of a certain monad were capable of germinating after exposure for ten minutes to a temperature of 300° F., while the parent was killed by a temperature of 140° F. Again, Cohn, though he would examine the organisms which arose under the extraordinary circumstances of Bastain's experiments, and the form that he alone found in many hundreds of experiments was *Bacillus subtilis*. "He followed it through all the stages of its development. It first appeared some twenty-four hours after the boiling, in the form of innumerable short rods. On the second day these rods shot out into long threads; on the third day, there appeared on the threads, at perfectly regular intervals, strongly refractive oval bodies, which he indentified as spores. Finally the threads and the spores were set free." Dr. Roberts says very reasonably that if the spores of a wound resist the heat of 300° F., why should not such spores as these resist the action of boiling water? He thinks that to expect such a feat from spontaneous generation (abiogenesis), as the building up of comparatively so complex an organism as Bacillus subtilis from dead organic matter, would be like breaking the theory's back. (Br. Med. Jour., Aug. 11., .77). Well, now, what more have we to do than decide that bacteria are the initiators and carriers out of the process of putrefaction? Dr. Sanderson, as I have already stated, raises an objection to the direct casual relationship of organic growth and putrefaction, on the ground that bacteria are not dependent upon a complex organic molecule for their pabulum. "We must regard bacterial life (in so far as it consists in the building up of new protoplasm) as a process consequent on the chemical process of putrefaction with which it is associated." (Sanderson, Br. Med. Jour., 1875.) Sanderson also quotes Hillier, of Berlin, to the effect that a "cultivation fluid" (Pasteur's or something like it) might be infected into a fresh egg without any result, the fluid containing bacteria but not being putrescent. Hillier also states that if Tartrate of Ammonia is added to fresh urine bacteria develops in it without attacking the urea. I do not know that these observations prove much. Sanderson does not state, as far as I remember, what forms of bacteria were injected into the egg; a drop of distilled water is not putrescent, but it will infect with bacteria a sterile "cultivation fluid;" the egg may not have proved a suitable soil for the bacteria after their vegetation in the "cultivation fluid." As for not touching the urea, the bacteria may have found Tartrate of Ammonia a source of pabulum more suited to their capacities. It's quite conceivable that bacteria act by producing a substace during the elaboration of their protoplasm, which has properties similar to pepsine or ptyaline, a chemico-physical ferment. Cohn says that pigment products of chromogenous fermentation are insoluble, and he has seen it *in* the cells of the bcteria. Yet these forms are not producers of putrefaction (apiogenous). Hence we infer that putrefaction does not come about from the pulling down of the complex albuminou molecules by the bacteria in seeking for their nutriment, but as the result of something which *does* take place during the bacterial growth in the one case but *does not* take place in the other. It would only be true to analogy to call this something a saprogenous ferment, and compare it with the pigment products of the other species. And here at once we see a beautiful analogy with the products of cell-growth in ourselves, the pepsine, ptyaline, &c., mentioned above. While apparently useless pigments, putrefactive, and disease ferments, are produced by the lowest organisms, all-important factors in digestion are the work of the exalted gland-cells. According to this notion the production of pigment should not be called a fermentative process at all; as far as we know the pigments produce no further change in the organic fluids; it is the lactic acid, the *saprogen*, and such like, which produce secondary changes in organic liquids.

This leads us on naturally to the discussion of lactic acid fermentation, which I will give some account of in the next number of this journal.

NOTES AND QUERIES.

How is this? One night it was between twelve and one before the sister of a ward could get a night nurse, so till then she had to sit up.

THE same night there was a tracheotomy and no special nurse could be found to attend it, and therefore two of the residents had to sit up with it.

WE have often wondered when the new Post-mortem room is to be built.

THE *Guy's Gazette* may well feel proud, it is known even in America.

ONE Sunday night at 10 o'clock a ghost was seen to visit a patient in one of the surgical wards on the second floor and enquire after his soul. We wish to remind such ghosts that there is a chaplain here, and that it is not Christian like to wake an ill patient from his sleep.

DURING the past winter how many out-patients have caught cold by sitting in the window seats outside the operating theatre on Tuesdays and Thursdays?

A probationer who had had no previous training whatever arrived at Guy's on a Saturday; the next Sunday she was actually put to nurse a tracheotomy, and as soon as that was dead she was put on another private case.

WE would recommend old Guy's men wanting assistants or locum tenens to mention it in this *Gazette* as it is largely read by the students.

IT is getting too much the fashion to dress one's cases late in the day. This is unfair both to patients, sisters and nurses.

NOT long ago there was a case in a private room. Neither the day nor the night nurse had been in the hospital three weeks and neither of them had had any previous training.

THE difficulties of getting up for the second college will soon become as great as getting through, at least as far as Guy's is concerned.

IT is usual now on the last day of sending in the Schedules to see the men who wish to go up flying about the Hospital first to the office then into the wards seeking signatures for their schedules just when they ought not to waste time but to read.

AT last as a great triumph they get a scrap of paper and on it is scribbled in pencil permission for them to go up. Surely this very primitive method of signing up might be improved upon.

WE saw a patient the other day who had lain in bed for three weeks in the same shirt. It is to be noted that this patient had a tendency to pass his urine in the bed. The state of the shirt was not pleasant for the nostrils but perhaps the *efficient* nurse liked it.

GUY'S HOSPITAL GAZETTE,
MAY, 1879.

IT has often been to us a matter of wonder that more men from Guy's do not compete for the entrance Natural Science Scholarships, Postmasterships and Demyships at Cambridge and Oxford. This is all the more to be regretted because men at the end of their second year if they have worked hard would stand a very good chance at either of the two Universities, and we would point this out more especially to those men who read for the first M.B. London, the first fellowship or any examination that requires more reading than the first college. Thus a man who has just passed his first M.B. London, would stand a very good chance for an entrance exhibition if he took up, say, Physiology and Chemistry, for surely with two or three years scientific training here he ought to be able to beat men fresh from school who in many instances succeed in carrying off the scholarships. Or again, a man who has just done his first fellowship might take up Physiology, and with a little extra work Comparative Anatomy, in this case the advantage would be very great for it would enable him to take out a M.B. Preliminary Scientific men, too, might compete, taking up Chemistry, Physics and Biology, but we would advise London men to wait till after their first M.B., and then think about Oxford and Cambridge, for the M.B. is an examination which it is well to get out of the way.

At Cambridge a good many of the Colleges award Entrance Natural Science Scholarships, such colleges are Caius, Downing, Clare, Sidney Sussex, Emmanuel, and Christ's. At these, and we believe some other colleges, the value of the Entrance Scholarships is about £60 per annum. The subjects of examination are usually Chemistry, Physics, Botany, Zoology, and Physiology, but in all instances excellence in one or two subjects is preferred to a superficial acquaintance with several. It will be seen that this would suit Guy's men exactly, for they could take Chemistry and Physiology. There is also the natural science tripos at which our men might take good places eventually. That such is the case it is easy to prove, because several Guy's men have done as we suggest in this article, and have finally come out very well in the natural science tripos. Then again, at Cambridge in connection with Caius College there are the Tancred Scholarships worth £100 a year for medical students, which are well worth trying for, and when obtained amply repay the winner for his hard work. The advantages for learning science at Cambridge are too well known for it to be necessary for us to point them out here, and the teachers there are often the best men in their own particular subject.

Turning now to Oxford we see that although there is not so much prominence given to natural science as at Cambridge still there are quite enough inducements to tempt a man to go there. As examples of colleges offering natural science exhibitions we may mention Balliol, Magdalen, Exeter and Christ Church. The most valuable of these are at Magdalen where they are of the value of £95 per annum, exclusive of all allowances. At Balliol there are the Brakenbury Scholarships of £80 per annum, tenable for four years. Then also there are the famous Radcliffe Travelling Fellowships worth £200 a year, which are splendid inducements to the study of natural science. The candidates must declare that they intend to practice medicine and they must travel abroad to pursue their scientific studies. Thus we see that at both Oxford and Cambridge natural science students are well provided for, and that many temptations are held out for those willing to study science.

The advantages to be gained by going to Oxford or Cambridge for the study of science are great. In the first place men will find that the fact that they have done well in the science tripos at Cambridge, or have taken a first class at Oxford "In Scientia Naturali" will give them a great pull in after life over men who have contented themselves with an M.R.C.S. or an L.S.A. This of course does not apply to men who take out a degree at London, and take out the F.R.C.S., but as we pointed out before, the Oxford and Cambridge examinations come in the course of work these men have to follow. Many men now enter the medical profession so young that they are qualified to practice at the age of twenty-one. To these men in particular would we recommend Oxford and Cambridge, for it is useless for them to think of setting up in practice while they are yet hardly out of boyhood.

The public cannot be expected to consult a youth when they can go to men who have been in the profession many years. Some men seem so anxious to rush off into "private practice" the moment they can; in fact, some men leave the hospital before the completion of their fourth year. These men we think make a great mistake, for their student life is probably the happiest part of their whole existence, and they had far better extend it a little by going to Oxford and Cambridge, instead of rushing off to attend to old women suffering from "bilious attacks." Another reason for extending one's time beyond the usual four years is that it enables one to obtain a little more knowledge, which is surely most desirable, considering men have only four years to learn the following subjects:—Chemistry, Anatomy, Physiology, Histology, Medicine, Surgery, Midwifery, Pathology, Hygiene, Medical Jurisprudence, &c., &c.

As some men may wish to obtain some information about the science scholarships, we may mention that all such information may be obtained on application to the tutors of the respective colleges.

ORIGINALITY.

Mr. Ruskin in one of his Oxford lectures (Nineteenth Century, January, 1879,) says:—"Of the dignity of Physical Science, and of the happiness of those who are devoted to it for the healing and help of mankind, I never have meant to utter, and I do not think I have uttered, one irreverent word. But against the curiosity of science leading us to call virtually nothing gained but what is new discovery, and to despise every use of our knowledge in its acquisition, ... I have spoken . . . . with sorrow."

Amongst the ever-pleasant writings of the above quoted author, it cannot but be somewhat startling to meet with such an accusation as this. It were superfluous here to attempt a vindication of science, since its champions are so many and so able. The point which I wish to consider is, how far the criticism is applicable to medicine, one of the foster-children of Science, or perhaps I should rather say, one of the bridges over the chasm between science and art. In art we admire the beautiful without any very exact conception of the cause of beauty. Science is deeper than this, while not forbidding a full appreciation of outside form, sound or colour, she also makes it her duty to tell us how these these things are. Why should science and art be antagonistic as well as antithetic? Does not the hostility rest chiefly with art? The elder perhaps jealous of the younger sister. Students of medicine have a great privilege: they enjoy the benefits of both sides without belonging to either. And is not this typical of the fully developed medical man? Ought he not to be an unbiassed observer, an unprejudiced adviser, an impartial judge?

But all this is digressive, and I must return to the point. To what extent is originality good in medicine, and how far are we to rely on what is already known?

In the present day the tendency in medicine as in art appears to be retrospective. In the latter case this seems justifiable; but is not scientific medicine rather young to begin looking back on the past days of her life? A review is doubtless interesting and important, if only to show us how much quackery and empiricism has passed for medicine, but we must not stop here. This knowledge must be only a stimulus—a means to an end.

Assuming then that many grains of originality are still needed for the garner of medical love, the question as to the cause of this constant need of originality naturally presents itself. I think one answer is not far to seek. It appears to rest in the composite structure of modern medicine. We may compare it to a chain, each link of which represents a separate branch of science. Let us take an example. The chemist discovers a new process; the pharmacist borrows this process and is enabled by it to extract a less adulterated alkaloid; the physiologist in turn takes the alkaloid and obtains by its agency very different results, in the lower animals, from those produced by older doings. The therapeutist is now able to try with more satisfaction to himself and less danger to his patients its effects on man, and finally the physician and surgeon enter the newly acquired remedy in their pharmacopœia. Thus by a correction of the premises, medicine has moved one step onward—a short step indeed, but a sure one.

Or again, the physicist invents a new instrument; the physiologist with it makes many and laborious experiments, and is finally able to hand it over to the physician who takes it into the wards and learns new and wonderful facts about his patients; even the number of corpuscles they possess, and the changes these undergo after diet or medicine. Thus are new drugs, new instruments, new facts, being constantly given to us by the older sciences. It is our duty and pleasure to use them aright.

But there is yet another very important aspect of the question; I refer to clinical originality. What a cutting sarcasm in contained in the assertion that there are a hundred thinkers to one observer! Perhaps the thinkers are original; if they are, so far well, but we must remember that it is often much easier to observe (?) a symptom if we think it ought to be there. If Mr. Darwin accepted psychological evidence in support of his theory, he might without much trouble trace an interesting parallel between the genus horno and the genus ovis. We are too prone to accept a certain catalogue of symptoms from the text books and to look for them, and them only, thus following blindly rather than observing independently.

It has been said by a writer of this century,

"Men get opinions as boys learn to spell,
By reiteration chiefly,"

and this is no doubt the chief reason why so many rare and almost impossible symptoms are to be found in the text books. One writer copies from another and adds a little of his own inner consciousness, till the books rival those of the Chinese in length and inaccuracy. Rather to be admired are the writings of such an author as Syme, who made each edition of his work on Surgery shorter than the last, by expunging methods as they became obsolete.

Thus, in one sense, it would be better to approach the

bedside, with the mind a total blank, innocent of text books, innocent of what ought to be, only desirous to learn what is. So would the facts be indelibly imprinted as in Locke's theory of mental development.

As to therapeutic originality, surgery is perhaps a better training school than medicine, for though we are constantly gaining new drugs, as already pointed out, still the surgeon seems more often called to act on his own resources, especially in the newly developed branches of plastic surgery. Certainly the physician has a wide original field before him, if he attempt to reason out the action of every drug he gives, but this is chiefly useful to himself as an excellent mental training and does not alter much the patient's prospects.

The Germans are often laughed at for their far-fetched theories, but in spite of this, it cannot be denied that they are ahead in practical as well as theoretical medicine. This depends, doubtless, on their greater concentration. A German thinks little of spending a lifetime in working out some subject which often seems to us less significant than it really is. More concentration is wanted, not the blind concentration of the specialist, nor the enthusiastic concentration of that learned lady in the "Coming Race," who wrote several volumes about the parasite inhabiting the hairs on the front paws of a species of tyer. There is a happy medium in all things, and from the careful concentration of an evenly balanced mind, true originality must spring.

Correspondence.

The Editor wishes it to be distinctly understood that he is not in any way responsible for opinions expressed by Correspondents.

TO THE EDITOR OF THE "*Guy's Hospital Gazette.*"

SIR,

I am glad to be able to supply the post-mortem evidence that is wanting in support of Mr. A. Scott's opinion in reference to strangulated omental hernia. In a case that I examined some time ago, the surgeon had removed a large quantity of omentum from an inguinal sac, but left what remained of it still adherent to its walls. The symptoms of obstruction continued, and the patient died of exhaustion in the course of a few days without their ever having abated. At the post-mortem it was seen that nearly all the great omentum had been removed, there being only a short, thick, tense band between the hernial sac and the transverse colon, which, together with the stomach, was drawn down into a V shape, the apices of the V's pointing to the inguinal canal. There could be no doubt that this severe traction gave rise to the symptoms, the stomach of course resenting it more than the colon.

I certainly agree with Mr. Scott that strangulated omentum, *per se*, cannot give rise to symptoms of obstruction, from which it follows that, in an inspected omental hernia with symptoms of intestinal obstruction, an operation is called for. Not with the intention of carrying out a pre-conceived idea, but first to discover the cause of, and then to relieve the obstruction. And the case I quote is assuredly in favour of operation, that is, if the operators bear in mind the arguments set forth by Mr. Scott.

I am, Sir, yours, &c.,
FRANK L. PAUL, F.R.C.S.
Pathologist Liverpool Royal Infirmary.

TYPHOID FEVER.

SIR,

Whilst visiting Clinical lately I have had an opportunity of seeing several bad cases of typhoid, one of which has been treated with a bath. Much discussion takes place every afternoon the physician goes round, concerning the value of the bath. I think, however, that we should get round much more quickly and not trouble Dr. Taylor to tell us the same thing over and over again, if men would just look up the subject for themselves. I remember in July, 1876, Dr. Taylor gave an excellent lecture on this subject, which was printed in the "Gazette." To show the undoubted good of baths I will quote the following:—"No doubt "statistics of Typhoid Fever are troublesome things "to manage. One has to remember the great differ- "ence of severity in different epidemics and the "difficulty one has in rightly discriminating between "mild cases of typhoid and mere pyrexia, with or "without gastric disturbance. Excluding all such "slight cases, Liebermeister had from 1843-64 a "mortality of 27·3 per cent., but in 1865-67 when he "employed the bath he had in 924 cases a mortality "of 17·6 per cent. The respective mortality for these "periods when all the cases were counted were 18 and "13·8 per cent. Other observers had the following "percentage mortality when using the bath:—Böhn "and Michel, 11·45; Scholz, 4; Riegel, 4·4; Gölz, "5·5; Merkel, 4·5; and Lenbe, 18·5. These are all "with one exception lower mortalities than those given "by Dr. Murchison in his treatise on Fevers which "are for the London Fever Hospital 1848-59, 17·26, "and for many cases British and Foreign, 17·45."

These results are surely enough to settle the question in favour of the bath. The objection against them that there are not enough cases cannot be urged.

So much for the practical side of the matter. That theoretically baths are useful none will surely deny. It is the high temperature that often kills and therefore the right treatment is to lower the temperature as the right treatment is to put water on a fire to put it out. Many people object to the "difficulty" of carrying out this treatment in private practice. All I can say is that if in the face of these statistics they fail to bathe in private practice, from fear of phantom difficulties, they ought to be liable to a prosecution for malepractice.

I apologise for occupying your valuable space, but I did so thinking that I might do some good.

I remain, Sir, your obedient servant,
NEMO.

We feel that we cannot let this number of the "Guy's Hospital Gazette" be published without noticing the death of Dr. Murchison. We feel sure that everyone must feel the greatest sorrow at the loss of one of the most illustrious men the medical profession has produced, and one whose place will probably not be filled for very many years. Several Guy's men used frequently to go round with Dr. Murchison at St. Thomas's Hospital, and those fortunate ones can testify to his having been one of the finest clinical teachers known by this generation of students.

CARDIAC REMEDIES.

(*Continued from page* 48.)

Turning now to the second method, that by experiments on animals, the following briefly are its advantages :—

1.—It enables us to vary the conditions under which we give the drug to an almost unlimited extent.

2.—It is possible to apply the drug to any structure or organ we please, and ascertain accurately what are the local and general effects produced.

3.—We may prevent the drug from reaching a particular organ, while ii is applied to every other part of the body, but cutting off its blood supply; we can then see whether the result obtained in the first case is absent.

An organ, such as the heart for instance, may be separated from all its nervous connections, and the remedy put on it; in this way it was proved conclusively that Digitalis acts on the heart muscle itself, and that the amount of work done was increased by small doses.

4.—It is possible to localise and isolate the effect of a drug in a way quite impossible in bedside experimentation.

Thus, Nitrate of Amyl was found to reduce the blood pressure; it might be through stimulation of the Vagus, this was divided and still the pressure went down; it might be through paralysis of Vasomotor centre, the cord was divided accordingly, but still pressure went down. It followed then that the nitrate acts directly on the coats of the arterioles, and this discovery was at once applied by Brunton to relieve the spasms and agony of Angina Pectoris with the best results.

5.—We can eliminate sources of error due to

a.—Predispositions (to a great extent).

b.—The bias of imagination, or what is usually called the "moral effect of medicines"; we cannot imagine this as existing in the frog for instance.

c.—Previous disease (to a great extent).

We have then, in the vast majority of instances, good matter-of-fact tissue to deal with, this has been especially valuable in investigating remedies which act on the nervous system, and has led to the discovery of the law. That the more highly specialised any system is, the more readily affected is it by any drug. Opium has on all animals a double action on the cord and brain; in man it produces stupor and general relaxation because the cerebrum is far more sensitive (or ought to be) than the cord; in frogs, however, opium causes convulsions, due to increased reflex activity, because in these animals the spinal system is far more specialised than the cerebral. So much then for the method of experiment.

In deducting therapeutical effects from the known physiological action of a drug, the following propositions should be borne in mind:—

1.—Diseases are not catastrophes or specific entities to be destroyed within; now devils to be summarily turned out as we would expel a worm or remove a calculus.

2.—That all diseases are the increase or diminution or qualitative modification of the incessantly active correlated forces which constitute life.

3.—That the Law of Conservation of Energy entirely does away with the idea that medicines, any more than food, can create or annihilate force. Medicines, like food, can carry latent energy into each part of the body, and they may become active within by increasing oxidation, nutrition, and secretion, and indirectly through nerves, motion and sensation.

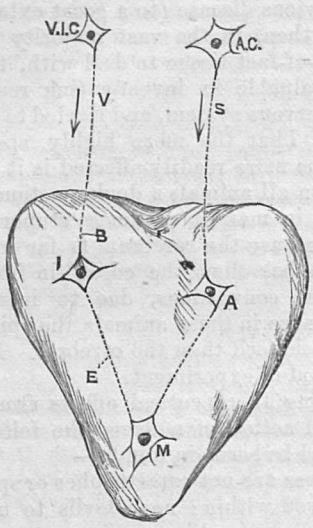
I shall now proceed to describe in detail the action of remedies on the heart, endeavouring to indicate specially those whose therapeutic use is founded on a rational basis. To facilitate description I append a diagram illustrating the innumeration of the heart, according to Schmiedeberg.

I will begin with the heart stimulants.

1.—*Ammonia.* Does not act on the heart itself. It produces its stimulant effects on the heart reflexly through vagus branches in the Bronchi, and other afferent nerves in the respiratory tract. It is a powerful irritant, probably attacking many filaments of nerves at a time through its diffusion. I have seen the heart of a rabbit brought to a standstill at once on applying strong ammonia to the nostrils. When injected into the veins it has immediate and powerful stimulant effects; hence it probably acts by irritating the centre A.C. in the bulb. The increase in number of the heart's pulsations is not always observed; this depends on the dose, and probably on the presence of other vasomotor disturbances in the body going on at the same time.

Therapeutic uses. In heart Syncope, most useful in purely *functional* cases, where the heart is beating slowly from nervous causes outside itself

Diagram illustrating Intracardiac Centres.



V.—Vagus proceeding from V.I.C., its centre in the Bulb, to I, the inhilitory intracardiac centre. B is the intermediate apparatus connecting V with the ganglion.
S.—Sympathetic quickening fibre, going to A the intracardiac accelerating ganglion.
M.—Motor intracardiac centre, inhibited by the fibre E from the ganglion I.
Stimulation of V, B, or I leads to slowing of the heart; while paralysis of the same, or division of V, leads to quickening, because the ganglion A can then act unimpeded on the motor ganglion M.

PRIZE PAPER OF THE PHYSICAL SOCIETY.

MR. PRESIDENT AND GENTLEMEN,

Among all affections to which the human body is subject, there is no class of diseases of more interest to the patient, more easily recognised by the student, and over which the practitioner of medicine can exert more curative power, than that of diseases of the skin.

Up to comparatively recent times superstition seems to have usurped to a great extent the Seat of Science in the treatment of these disorders. A skin disease was looked upon as a Safety-Valve—as a kind of tap, out of which was continually running all "bad humours" and "acrimonies" generated or introduced into the organism; and if the disease were cured, or the tap turned off, a metastasis was said to take place, or a revulsion of the peccant matter to some internal organ, with often serious results. The itching, irritation, and restlessness, frequent accompaniers of these maladies, were not to be allayed, for they were carrying into effect nature's grand law of counter-irritation, and constantly averted death. In 1844, a Physician in London, of knowledge and standing, declared that the cure of itch was often attended with fatal results. To so great a length was this humoral pathology, as it has been called, carried, that some doctors would not take measures to rid their patients of pediculi, lest visceral-disease should be produced.

The causes of dermatoses were assigned with promptness. Mental anxiety, eating cold vegetables, sudden chills, etc., were originators of a few affections; while the majority was set down as due to "vitiated conditions of digestive organs."

At the present day the tendency is, I believe, to regard all diseases as fit objects on which to exercise the curative art. Scabies, is thought not to be the effect, but often the cause of a "dyscrasia." The irritating and rest-disturbing Scalled-head, is not looked upon as a health producer, but as a health reducer. Causes are confessed to be but little known—but a rash round the buttocks of an infant is acknowledged, at times, to be due to uncleanly clothes, not to bad blood; and the eruption on a washerwoman's hand to the alkali used in following her occupation, not to indigestion.

The following remarks are based principally upon observations which I have made at the out-patient department. There have been several divisions of these disorders, "almost every writer on cutaneous medicine having introduced a classification." Dr. Fagge says it is impossible to attempt a systematic arrangement of them; and thinks we cannot go beyond natural groups. For convenience, I will divide the few varieties that will be considered into three classes.

1.—Those that are tolerably easy to cure.
2.—Those which cannot be cured without difficulty.
3.—Those which can only be alleviated.

Under Head 1 will come, Eczema, Prurigo-Senilis, Scabies, Ringworm.

ECZEMA.

A large proportion of cutaneous lesions, are included under this term. It comes under notice, as mere redness of the skin; but is generally seen as a papular, vesicular, or pustular affection. All of these forms, together with secondary lesions (such as Scabs, Scales, and fissures) may be seen progressively, in many cases. The disease, however, may stop at either stage. Thus, the terms Erythema and Lichen, have been erronously used for Eczema. The pustular variety is often a severe complaint, especially in children, whose heads may be almost completely covered by the thick, yellowish scabs, produced by the bursting of the pustules. This condition bears a superficial resemblance to Favus, for which I have seen it mistaken. On the face, too, the pus may dry up, producing a masking of the features—hence the old name Porrigo Larvalis (*Lat. Lava mask*).

When Eczema is attended with pus formation, it frequently goes by the name of "impetigo."

Locality.—It affects those parts where the skin is thin, and where two surfaces come into contact, such as the flexures of the joints, the skin behind the ear, the fold of the neck.

Signs.—It is mostly a wet complaint. The other chief symptom is itching. Children constantly exert friction upon the irritating part.

Causes.—Any irritant, whether it be mechanical, or chemical, or thermal, may start an Eczema. Dr. F. Fox says, that it occurs almost exclusively in persons who are of a Strumous habit; and most of the cases that I have seen, have occurred in such persons. Hebra, has frequently met with it in rickety children. It appears to be the opinion of most authorities that whenever the body is in a state of debillty, from any cause whatever, it is predisposed to Eczema.

Diagnosis.—Very little difficulty in recognising a typical case; but when the complaint is chronic and attended with much scale formation, I have seen it mistaken for psoriasis. When the dermatilis is general, and perulent scabs are present, it is now and then taken for Syphilis. It is more like Scabies than anything else.

Treatment.—If cause can be found, it must be removed. The disease may be due to pediculi. Eczema of the leg is frequently due to varicose veins. As this inflammation generally accompanies an impoverish general condition, most cases require tonics. Dr. Taylor, of New York, says he has very good results, while treating children with Cod-Liver Oil. The friction which children employ to the eruption, has a tendency, I should think, to aggravate the complaint, and to retard recovery. Arsenic internally, and tar externally are of use in those cases that resemble psoriasis (*i.e.* chronic). It is important not to let these dermatoses get into a chronic state—for Samuel Plumbe well says,—"Chronic disease of the Cutis, when it has become habit of the part, is almost as difficult to impede, the check, or subdue by artificial means, as to suppress normal functions of that part."

The arsenic may be given in large doses. Dr. Pye-Smith increased the dose, in a girl, æt. 7, up to Lig. Ars. ℥x.v. ter. die. I have read of Lig. Arsenic being given to an adult in twenty-eight ℥ doses.

Prognosis.—Eczema is prone to recur. More than one year ago, a boy, æt. 14, was in the Hospital for general Eczema. He was cured; but ever since a patch of the old complaint has appeared now and then in some part or another of his body.

SCABIES.

We naturally consider this affection next to Eczema—indeed it is described by Hebra as "an eczema, produced by the itch insect." The presence of the acarus sets up inflammation which may be papular, vesicular, or pustular, in character. That the latter form frequently exists, may be gathered from the fact that Willan classed Scabies among the pustular diseases. It attacks the thin skinned parts, as the webs between the fingers, the genitals, and generally, the anterior surface of the body, in preference to the posterior. Dr. Pye-Smith, thinks a group of vesicles or Scabs over the lower end of the ulna is pathognormonic of itch. The buttocks are a frequent seat of the disorder in children. I should think this is explained by the frequent contact which takes place between those parts and the hand of the nurse or mother—the hand being commonly affected in adults.

Signs.—The popular name expresses the chief objective symptom. Scratching not only increases the severity of the dermatosis, but also the extent, for the acari are carried by the finger nails to all parts of the body. The itching resembles that of other dermatoses in being worst at night. (Some old writers used to explain this by stating, that at night time the acan came forth and wandered over the skin, seeking prey, and at day they returned to their dens.) It *is* explained by the greater quantity of blood at the surface at this time. Sufferers do not complain of the pruritis, while they are up, but as soon as they "get warm in bed."

Causes.—To contract Scabis, it is not necessary to have tactile communication with an inoculated individual, for the eggs of the itch-mite have been found in the air. Want of cleanliness is a great predisposing cause. I have, at times, seen Scabies in people who have recently landed from a long sea voyage,—the supply of water, for washing purposes, on board ship is scanty.

Diagnosis.—It is frequently stated that the only proof of a complaint being itch, is the discovery of a run (or the animals burrrow), of an ocarus, or of its egg. The itch-mite is about the size of a pin's head, eight legged, with a convex dorsal surface from which spines project. It is easily recognised under the microscope. The eggs are very pretty objects when magnified; there is, apparently, a space between the young acarus, with its legs tucked in, and the egg shell. The runs are easily perceived in the early stage of the disease; but when it has lasted for some time, it is often difficult to find one. Half an inch is considered to be a very good length for a burrow. I have measured one two inches long. In children abscesses are often seen, as result of itch, at finger ends, and about the knees and buttocks. In a boy, aged 7, only moderately affected, the T in axilla was 101·5. This disease is liable to be mistaken for Eczema. The seat of the eruption is a good guide. In adults, when papules are chief lesion, it is frequently mistaken for Prurigo, but prurigo as we see it, affects principally the back of the shoulders, regions which are rarely touched by itch. The multiform character which Scabies often assumes causes a resemblance to Syphilis.

Treatment.—It is remarkable in parasitic diseases, that before the parasites were discovered the same treatment was adopted as we now employ. Sulphur ointment should be rubbed thoroughly into all parts. It kills the acari in three days; but it should be continued some time longer in order that the young animals may be destroyed as they are hatched from the eggs.

The inflammation of the skin generally disappears without any treatment. If after thoroughly using the popular remedy the eruption does not involute, we may presume that the irritating sulphur is prolonging the dematosis, set up by the deceased acari, and an appropriate substitute should be used instead. In books, baths are recommended, but at the Hospital, sulphur produces a speedy and unaided cure. Clothes are generally recommended to be baked, but if the ointment be thoroughly used, it impregnates the garment, and thus takes away any necessity for this measure.

Prognosis.—Individuals now and then return after having left four or five months before, apparently cured. It is difficult to say whether such instances are cases of relapse, or whether they have contracted the disease a second time.

PRURIGO.

Under this term continental writers (especially Hebra) describe a severe papular affection, lasting the whole life of the patient, and cases of "spontaneous and entire recovery from which are almost unknown." Little can be done for these cases. It attacks the Extensor in preference to the flexor surface: and after a time is complicated with Eczema and large lymph glands. So great is the suffering thus brought on, that people, after having endured the disease for some time, have committed suicide. This malady is rarely met with in England. Dr. T. Fox and Dr. Fagge, men of large experience, have each seen only one case. In our Museum, Model No. 185, the chest and abdomen of a person afflicted with this complaint is represented. The cases that have presented themselves as out-patients during the past year, have been, I think, without exception cases of Prurigo-Senilis, which Mr. Hutchinson says, is a polite term for Prurigo-Pedicularis. The fact that pediculi often existed on the body with the disease was known 50 years ago, and mercurial lotions were recommended. The persons, *this* Prurigo attacks are generally the uncleanly and the advanced in years. I have only seen one instance of it in a woman.

Locality.—It affects the chest, back, and loins principally.

Lesions.—Visible to the unaided eye, are papules often tipped with coagulated blood (produced by the scratching), scratch marks, and, after the disease has existed for some time much pigmentation and hardness of the skin. At times a man present himself complaining of intense pruritus, and no lesion can be seen.

Signs.—I have noticed that sufferers from Eczema, Scabies, and other disorders, abstain from exerting friction upon themselves while they are in the consulting room; but the victims of Prurigo frequently scratch themselves while they are being examined. It is a common expression in the mouths of these people that "they feel as if they could tear themselves to pieces." The scratching becomes after a while apparently a reflex action. A man, aged 65, who was in the Hospital a short time ago with this complaint, seemed to spend all his time in exerting friction upon some part of his body. He would scrape his arms along the walls, or rub them along the chain attached to his bed—at all times of the day he was scratching himself, often with great vigour. Well, when this man was half asleep I now and then placed my fingers in his, and immediately he would begin to scratch at my hand—the contact of flesh with his finger-ends apparently exciting a reflex action. When his thoughts were engaged in conversation, too, he would act in just the same way. Thus, we can understand, how, after the exciting cause of the disease has been destroyed, this scratching might continue and account for the difficulty there sometimes is in effecting a cure.

Diagnosis.—When the disease occurs in the feeble, extravasations of blood into the cutis may co-exist: and the disease in such cases is apt to be taken for purpura. But the situation of these hæmorrhages on the parts easily reached by the fingers, their elongated not punctated character, and their appearance after the papules and itching, point to their being dependent upon the force used to allay the pruritus.

Treatment.—A pediculi-killing application should be thoroughly used. It is important to remember that irritability of the skin is often a symptom of abdominal disorder. (Dr. Habershon.)

(To be continued.)

WHAT WE ARE COMING TO!

Questions at the late Primary Examination for the Diploma of Membership of the Metropolitan Police, April 25th, 19—.

ODOTOMY AND POLIOGY.

[Candidates MUST answer at least four including one of the first two of the following questions.]

1.—Describe briefly the development of the "Police News," and give the peculiarities in its circulation.

2.—Describe the structure and functions of a Newgate cell; Give the minute anatomy of the organ of St. Paul's.

3.—Write a full description of the Mary-le-bone.

4.—Give the anastomoses of Ratcliffe Highway. How would the circulation be carried on were this thoroughfare occluded.

5.—Describe the dissection necessary to expose the Metropolitan Railway from Moorgate Street to King's Cross, mentioning in order all the structures met with.

6.—What is seen in the heart of the Metropolis. Describe its situation with regard to the ancient walls of London.

WANTED.—By an old Guy's man, the first two volumes of the Guy's Hospital Gazette. Also a second-hand microscope of high power, in first-class condition. Address by letter F.B., care of Mr. Hills, Surgical Instrument Maker, King Street, Boro.

GUY'S HOSPITAL GAZETTE,
JUNE, 1879.

CARDIAC REMEDIES.

(*Continued from page* 58.)

I will begin with the heart stimulants.

1.—*Ammonia.* Does not act on the heart itself. It produces its stimulant effects on the heart reflexly through vagus branches in the Bronchi, and other afferent nerves in the respiratory tract. It is a powerful irritant, probably attacking many filaments of nerves at a time through its diffusion. I have seen the heart of a rabbit brought to a standstill at once on applying strong ammonia to the nostrils. When injected into the veins it has immediate and powerful stimulant effects; hence it probably acts by irritating the centre A.C. in the bulb. The increase in number of the heart's pulsations is not always observed; this depends on the dose, and probably on the presence of other vasomotor disturbances in the body going on at the same time.

Therapeutic uses.—In heart Syncope, most useful in purely *functional* cases, where the heart is beating slowly from nervous causes outside itself

In adynamic fevers, or in wasting diseases where heart muscle is slowly degenerating, it can be of no use except in emergencies. In Syncope from chloroform poisoning it is a dangerous stimulant to use, and had better be avoided. Some cases have been recorded where the last flickering ray of hope has been entirely destroyed by an irritating whiff of Ammonia. In chloroform Syncope the heart muscle itself wants stimulation, and it is unscientific therefore to use remedies acting through the brain. (In 1842 Glover discovered that chloroform injected into the jugular vein instantly arrests the heart's action and destroys its muscular irritability; the vapour of chloroform applied directly to the heart muscle also exerts a similar influence. Consult Anstie, on "Stimulants and Narcotics," p. 321.)

Ammonia when given to the stomach is not such a powerful stimulant, but the indiscriminate use of large doses of the Carbonate (gr. viii. ter die) in cases of Chronic Bronchitis may be attended with danger to the over distended and deceased heart commonly associated with this condition.

Alcohol.—The effects of Alcohol on the circulation depend on the dose. (*a*) Small doses increase the number of ventricular contractions, while the periods of diastole are considerably shortened. Sphygmographic tracings do not show that the arterial pressure is raised, so that the increase of the force of the pulse felt by the fingers is not due to an increase in the blood pressure. Moderate doses, then, increase number of contractions, and to a slight extent probably the force also. (*b*) Large doses diminish the frequency of the contractions, probably by a direct poisonous effect on the heart; at the same time there is a decided fall in blood pressure, and as this takes place when both vagi are cut, this result is brought about by partial paralysis of vasomotor motor centre; flushing of the face is a common symptom in alcoholism. Enormous doses of alcohol weaken the heart and lower the blood pressure very much, but the narcotic effects of alcohol here come into play also. To sum up, moderate doses of alcohol increase heart's contractions in number, but the increase in force seems to me to be more apparent than real. Large, poisonous doses weaken the heart and lower the blood pressure.

Therapeutic uses.—In temporary loss of cardiac power alcohol is very valuable, half an ounce or an ounce may be given, and it acts better given hot. Where the patient is unable to swallow, it may be given *per rectum*; and in cases of sudden emergency, or when the enemata are returned at once, the subcutaneous injection of ℿx. of brandy is most efficacious. Lately in the wards I had the opportunity of testing this method in several cases. One, the case of a woman in Mary ward, who had an attack of alarming Syncope one night. I found her pale, pulseless, and almost unconscious, and quite unable to swallow. Five drops of brandy, mixed with a little water, was injected into her arm, and in two or three minutes another five drops. Immediately after the second injection she opened her eyes and looked about, and at the same time the pulse became perceptible again at the wrist. A third injection was presently given, after which she was able to swallow teaspoonsfuls of hot brandy and water.

In this case there was a history of Rheumatism, but the physical signs of valvular heart lesion were not well marked. There was strong evidence in favour of gout. The Syncope was the most alarming I had ever seen, and has been repeated once or twice since but in a much more moderate degree.

In cases of sudden failure of the heart, where well marked organic lesion exists (for instance, mitral disease), I have found the subcutaneous injection of brandy with a few drops of Tr. Digitalis of great service. I tried it in the case of a boy in Stephen ward with bad mitral disease to whom I was called one morning. He was apparently lifeless, lying huddled up across the bed, quite unconscious, and the pulse was imperceptible at the wrist. Brandy and Digitalis, in eight drop doses, were injected subcutaneously and alternately, and in a few minutes he had so far recovered as to be able to swallow a strong mixture of Ether and Digitalis, and he lived on this mixture for another eighteen hours. In this case I had no hope of saving the boy's life, because the disease had been steadily progressing for some time. But he so far recovered consciousness and

strength that he would have been able to make a will, for instance, if it had been necessary.

In a case of diabetic coma where there was unconsciousness, insensible conjunctiva, and a scarcely perceptible pulse, an injection of ten drops of brandy subcutaneously produced an immediate effect on the pulse, and a slight general stimulation, but the effects in this case were only transient.

A woman was admitted into Clinical last December, in a comatose condition, with high temperature and imperceptible pulse. As she was quite unable to swallow and enemata were not retained, ten drops of brandy were injected subcutaneously and repeated every six hours. The woman lived thirty-six hours, and the heart was certainly kept going by the brandy. It was a case of Enterica with failure of the heart.

The ordinary use of Alcohol in chronic cases includes stimulation of the circulation, but the value of it for such an end is questionable, for the reason that large doses, or habitual alcoholism, tend to weaken the heart. But where some stimulant is required for a few weeks, as in convalescence from acute disease, alcohol is most useful.

ANIMAL REASON.

An interesting series of communications have lately appeared in *Nature*, detailing instances of apparent reasoning in animals. Mr. Henslow contends that the reasoning is always *practical* but never *abstract*, meaning that it implied nothing more than the immediate fact would suggest to the animal.

The many instances which must occur to all of us, of the methods adopted by cats and dogs to attract attention so as to be let into a room, would alone suffice to contradict this view.

We quote two which were given in *Nature*:—

A cat which could just reach the knocker used to hold it in his paw and give a knock, if this were useless he gave a postman's knock, and were this unsuccessful, he would follow it up by a rat-tat.

A cat which from a kitten used to hang on by one leg and put the other fore paw through the knocker and knock twice when she wished to gain admittance. This she would do at both front and back doors.

Such acts imply that at any rate these animals have the faculty of reasoning, whilst Sir T. Lubbock's interesting experiments on ants and bees shew that they are decidedly devoid of such power, except in its most elementary forms.

It seems certain that not only can the higher animals reason in a sort of reflex manner, but they also possess the power of comparing a phenomenon with the result of their previous experience. Such abstract reasoning seems to differ from the intelligence of a man only in degree.

The following I believe to be the only instance on record of politeness on the part of a donkey:—

This distinguished individual used to graze in a field with some cows. At milking time it would lift the latch and hold the gate open till all the cows had passed, when it would allow the gate to shut, and would go home with them.

As an extraordinary instance of gratitude we may instance the following:—

A man finding one morning at breakfast a mouse in his sugar basin turned it out for old tom who was lying purring on the hearth rug. Next morning he found lying outside his door two mice which the cat had brought as a thank offering.

How to account for the origin of instinct is now one of a naturalist's great problems. There is much to be said in favour of the view that it is the result of such reasoning and modes of life, which were essential, or at any rate beneficial to the species; which, having been repeated for many generations, are now handed down from generation to generation as the quality called instinct. That instinct can be modified by reasoning I think the following will show:—

A wild squirrel during its first year of confinement, used to hide most of the nuts with which it was fed, but finding that it was fed during the winter, it in future years discontinued the habit.

As an indirect evidence in favour of abstract reasoning we may adduce animal fetichism which is generally present when a new phenomenen not agreeing with previous experience occurs, but which disappears when the cause is made known. Animals which will go wild with terror at the sound of thunder or artillery practice can be cured by being taken to a battery, so that they may become aware of the cause.

Mr. Romanes once tried the effect of blowing soap-bubbles and inducing his terrier to come after them. The dog was, at first, greatly interested, but had a misgiving as to whether they were alive or not. Ultimately he was bold enough to advance and touch one with his paw, when it of course, to his intense astonishment, disappeared. He was induced to touch another, but after that he slunk from the room, and nothing would induce him to re-enter it. It was fetish.

Many horses are convinced to the intense disgust of their drivers that bicycles are fetish. Before, however, these questions can be considered as settled it will be necessary to collect and sift a large number of instances from all parts of the animal kingdom, and the great interest of the subject will secure many workers in the field.

A CASE OF TETANUS.

By W. HALE WHITE.

I have sent this case to the *Gazette* as I think it might be of interest to some for the following reasons:—Firstly, the Tetanus was probably not due to any wound, although a few scratches were found. Secondly, the mode of death was exceptional. Thirdly, the intended treatment, viz., with Bromide of Potassium, was novel.

F. B., æt. 44, admitted into John ward under Dr. Taylor, May 17th, 1879. Was out on Monday last (this is Saturday) in the rain, got wet but changed his things when he came home. About a fortnight or three weeks ago he scratched himself slightly on both elbows and also hurt the ball of the right great toe with a nail in his boot. Remains of these injuries are visible now but they are very slight.

On the Tuesday morning he had some pain in the back and also a "stiffness about the neck and a sore throat." There was also slight contraction of the jaw. He then first began to experience difficulty in swallowing and in speaking. On Wednesday night he had opisthotonos. Has during the attack suffered much from difficulty in respiration, and during the spasms pains shooting through from the epigastrium to the back. Has bit his tongue once or twice. Has had very little sleep.

On admission.—Seen 2.40 p.m., 17th May.

Strong well developed man, slight sore on right elbow, slight scratch on left elbow, and mark on ball of right toe where he says a nail of his boot ran in. He sweats a great deal. His tongue can scarcely be seen as he cannot protrude more than a quarter of an inch owing to contraction of the jaw. The muscles about the neck are stiff also those of the trunk. The legs and arms are unaffected. He has spasms about every three minutes, and during them there is marked opisthotonos, the trunk resting on the head and buttocks. During the spasms the brows are wrinkled, the eyes closed and the lips drawn apart. Does not sleep, but as he lies on his back he mutters a good deal and says he is dreaming. There is no resus sardonicus.

T., 101·8°; P., 140; R., 30.

Ordered Pot. Bromid ʒj. Screen round bed.

Abua ad. ℥j. every two hours.

4.30.—Was called to the patient as a severe spasm had come on and he was in peril of death from asphyxia. The face was intensely livid. The arms were quite rigid as also were the legs, the right leg was flexed on the abdomen. The abdominal muscles were quite rigid. The spasm passed off and the patient drew a breath but the spasm directly returned. The alternation of spasm with respiration continued for a few minutes, the spasms becoming shorter each time till at last the patient regained his natural colour.

4.45.—Had second dose of medicine.

7.—The patient was again siezed with spasms of the respiratory muscles, but this time the arms and legs were unaffected. Artificial respiration was commenced and a subcutaneous injection of Digitalis was used but without effect, and the patient died from asphyxia. This fatal spasm was caused by an attempt to give the patient his third dose of medicine.

Temperature in Rectum an hour and a half after death was 104·2°.

Body was put in a cool place face downwards and ice was put on the spine.

P.M. on May 18th, 10.30 a.m., fifteen and a half hours after death. Only the spinal cord and brain were examined and no naked eye abnormality could be discovered. Dr. Taylor took the cord to prepare it for microscopic sections.

PRIZE PAPER OF THE PHYSICAL SOCIETY.

(Continued from page 60.)

RINGWORM

Is the result of an unhealthy action of a limited portion of the skin, set up by a fungus. It is a disease of childhood. The oldest person I have seen affected with it was aged 16. It may occur on any part of the body. Cases are not uncommonly seen in which the disease is half on the scalp and half on the adjacent skin. On the head it enters the hair follicle, infiltrates the papilla and even the hair itself. A patch on the head is recognised by the absence of fully developed, and by the presence of short brittle, broken-off hairs, (hence the name tinea-tondens), *and* by the scalings of the affected area, due to hyperformation of epithelium. On non-hairy parts it first shows itself as a round patch as large as a pea. Within three days it may triple it size. I have seen a case in which the disease, which was situated in front of the elbow, was as large as the palm of a man's hand. In a well marked case the surface is raised, red, round, irregular and slightly scaly. At the outer margin, where the fungus is most active, vesicles may be formed—hence the old name herpes circinatus. The centre is said to heal as the circumference enlarges—but in all the cases that I have seen the centre has shewed no such tendency.

Signs.—I have never heard a patient complain of itching. That this sensation is not very troublesome is shown by the fact that patients do not show themselves until the disease has become a deformity.

Diagnosis.—There is no difficulty in recognising the affection. In fact, parents, sometimes, treat it at home. The recognition of the spores, in and around the hairs, and epithelial elements removes any doubt. Ringworm is very contagious. Willan mentions a school where it attacked a boy, and within one month fifty in that school were affected.

Treatment.—As in Scabies, if the parasite be killed, the inflammation produced by it generally subsides. Any mineral acid lotion will accomplish the desired end, as well as numerous other things. It is important to apply the remedy not only to the surface of the patch, but also to the skin round it for the space of one inch. On the head epilation should be performed.

Prognosis.—Temporary baldness is often left on the scalp. I have seen dark pigmentation on the site of a ringworm that had been cured months before.

Among the diseases of the second class we will consider Acne and Sycosis.

ACNE

Is due to retention of the sebaceous matter in the gland duct, and consequently may effect any part of the body except the palms and soles. But the face, chest, and back are the favorite sites. In its simplest form the serumeu is merely retained in the follicle—there is no inflammation. At the point where the gland product becomes level with the skin, it frequently becomes impregnated with dirt; and hence the face often appears studded with black points. But the presence of this retained secretion frequently acts as an irritant and sets up inflammation around: and thus nodules (Dr. Pye Smith's word) are produced, of a lurid colour, often possessing no apparent orifice, and having the cause of the inflammation in the centre.

These nodules, after a variable time, suppurate, burst, and may leave scars.

Signs.—Produces very little discomfort—in severe cases there is a sensation of tightness about the face. That it has no material effect may be gathered from the fact that few people present themselves to be cured, though it is a common disorder. And those who do consult the physician are mostly young women, who complain of the disfigurement more than of the discomfort.

Causes.—It is stated, on good authority, to be frequently connected with gastric or uterine disorders. E. Wilson says it is due to sluggishness of nerves, and want of activity in the skin. It is said to occur most frequently in those who lead a sedentary and confined life.

Diagnosis.—Acne is capable of being mistaken for lupus when confined to a limited area. But in the latter not only is there an absence of the maggot like plugs of sebum, but the sebaceous glands are obliterated.

Treatment.—There is not sufficient vis a tergo to expel the secretion, and therefore a vis a fronte must be substituted. In all cases the face should be washed frequently with hot water, and friction exerted with a rough towel. In severe cases poultices, I should think, would be of use. A stimulating application is an important item in the treatment. When the age of 25 is reached, Acne generally, spontaneously declines.

SYCOSIS

Is a disease brought on by inflammation of the follicles of the hairs on the face, beyond the regions of which it has no tendency to spread. It first shows itself as numerous red nodules through each of which a hair passes. After a little time (eight or ten days,) these tubercles suppurate, and scabs (five to seven days pustules) form. Both tubercles and pustules may become confluent or remain distinct. When Sycosis is well developed the whole chin and sides of the face are covered irregularly with the lesions mentioned: and the skin feels knotty and indurated. The appearance presented by the nodules, and the unequal ulcerated surface somewhat resembles the pulp of a fig—hence the name Sycosis (σῦκον fig.)

Cause.—It is said to be developed in those who are exposed to a high temperature, such as bakers? (Rayer). Dr. Fox asserts that Eczema of the face, may, by spreading, induce the disease; but Eczema of the face is, I believe, rare in the adult.

Signs.—The five or six individuals in whom I have seen the complaint, were in other respects apparently quite strong and well. Patients complains of a feeling of tenseness in the parts which is akin to pain.

Treatment.—It is important that scabs, and all produce of the disease should be removed, and thorough cleanliness be observed, the hairs should be pulled out, so that pus may escape freely, and that the remedy, when applied, may reach the hair follicles, the primary seat of the disease.

Prognosis.—Sycosis is very troublsome, often when it is apparently well, it breaks out again in as bad a form as ever. A man is now attending as a out-patient who has had the disorder for twenty years, and he has been under treatment all that time. The disease is now far from well.

Urticaria, and Herpes Zoster, will be considered as specimens *of the 3rd class.*

URTICARIA

Is a disease about which very little is definitely known. It is produced according to some by "Sudden effusion of serum into the papillary layer of the skin."

As the name indicates, the appearance of the skin in this affection is much the same as that produced by applying stinging nettles to the body. The wheals may be few or many, large or small, oblong or round, or variously shaped. They have a white centre and a red margin. Their development may be sudden, and without any premonitory signs. It may, or may not, be attended with constitutional symptoms. The skins of some people while they are suffering from this disorder are very irritable; so that the slightest touch produces a lesion. A man is now attending as an out-patient on whose skin this "factitious urticaria" may be produced. If the nail be drawn down his arm, in two or three minutes a red line is plainly visible, and in five minutes a raised mark with a white centre appears. In an hour or so all trace of the wheal is gone. *This*, like the real disease, is attended with tingling and burning sensations.

Causes.—Some article of diet which disagrees with the system is a frequent cause (such as shell fish, crabs, some fruits). A young man, who attended as an out-patient last summer, developed the complaint after he had eaten plentifully of crabs. Another, a lad æt. 15, came some months ago, with wheals all over his body, they were confluent in places, causing one to think of small pox. The face, shoulders and back were covered: and the whole skin puffy. He eat one mussel before the onset of the disease. Cases are recorded, where, at sea, the sailors, after partaking of the fish which they have caught, have all been stricken with urticaria. But eating food which does not agree with the system, is only one of the causes, for amongst the patients, treated for this malady during the past year was a child $2\frac{1}{2}$ years old.

Treatment.—If the cause of the disease is thought to be present in the stomach, an emetic should be given. Alkalies and bitters are prescribed empirically. Workers in Billingsgate, in whom the disease is common, are said to check its onset by drinking largely of vinegar. Duretics are rationally administered, to rest the skin.

Prognosis.—If the disorder be dependent upon some unassimulating particle, recovery is rapid. But the chronic cases are very troublesome.

HERPES

Is not a disease of very common occurrence. I have not seen more than 15 cases during the past year. The peculiarity of this affection is that it depends upon an alteration of the nerve or nerves supplying the skin upon which the eruption is seated. In the majority of cases, the disorder follows the course of one or more of the intercostal nerves. It commences with red patches, the first (patch) that shows itself being always nearest the spine. On these are developed very soon, tight vesicles, two or three of which may coalesce so as to form a bulla. These vesicles may break in about four days time, or they may endure for six or seven days, at the end of which time they may have become sero-purulent, or purulent. After the separation of the scabs, redness remains for some time, and often permanent scars. The history given is often such as this. A man about 30 years old suffering from his chest, awoke two or three times during one night, feeling pain over the seventh and eight ribs on the right side. The next night the pain kept him awake all night through. In the morning he found the eruption on the skin. The patient said the pain was much increased when he coughed. According to statistics Zona occurs more frequently on the right than on the left side. Nine out of eleven cases that came successively to Guy's had Hepes Loster on the right side (Dr. Pye-Smith).

Signs.—Is generally preceded by painful sensations. Rayer says "an acute local pain, like that caused by burns, frequently continues to the end of the malady." Severe Neuralgia is frequently bequeathed, especially to the old.

Diagnosis.—The girdle of inflammation half round the body cannot be mistaken. The affection is not so easily recognised elsewhere. I have seen Herpes in a early stage, following the 1st division of the 5th, on the forehead, nose and cheek, mistaken by about ten students. Most called it Lupus Erythematosus. Herpes around the anus (inferior hæmorrhoidal nerve), I have known it to be taken for Eczema and treated on that supposition. Herpes præputialis may be mistaken for chancre, and this error is most likely to take place when the glands in the groin are enlarged. Herpes of the præpuce is a symptom of stricture of uretha.

Treatment.—The eruption should be protected from being rubbed by the clothes. The Neuralgia following the subsidence of the malady is often obstinate. Quinine, Arsenic, Colchium, Continuous Current, and Subcutaneous injection of morphia Dr. Pye-Smith says, have all been of use. Might stretching the nerve do good in these cases? This finishes what I have to say about individual diseases.

As a rule, there is no difficulty in recognising a dematosis, and allotting it to its proper place. But occasionally a case presents itself which cannot be referred to any well known disease, though in one or two points it may resemble many. These paintings represent parts of an eruption, which affects a lad aged 17 years; he is an out-patient at Guy's. Dr. Pye-Smith, noting the peculiarity of the eruption (which, as far as I remember, is situated on the back, chest, buttocks, thighs, and arms,) sent him for examination to some eminent men, such as Mr. Hutchinson. By these authorities it was stated to be the following diseases: Ringworm of the body, Lupus Erythematosus, Congenital Syphylis, Acquired Syphylis, Psoriasis. (It is undoubtedly a case of doctors differing.) But, I have heard Dr. Wilks say, that "by naming everything that we see, we assume that we know everything, which is far from being the case." Before concluding I must acknowledge my indebtedness to Dr. Pye-Smith for the greater part of any knowledge which I may have on this subject. I have also to thank him for the use of the representations that have been handed round.

POULTICES.—The common practice in making poultices, of mixing the linseed meal with hot water, and applying them directly to the skin, is quite wrong, because, if we do not wish to burn the patient, we must wait until a great portion of the heat has been lost. The proper method is to take a flannel bag (the size of the poultice required), to fill this with the linseed poultice as hot as it can possibly be made, and to put between this and the skin a second piece of flannel, so that there shall be at least two thicknesses of flannel between the skin and the poultice itself. Above the poultice should be placed more flannel, or a piece of cotton wool, to prevent it from getting cold. By this method we are able to apply the linseed meal boiling hot, without burning the patient, and the heat, gradually diffusing through the flannel, affords a grateful sense of relief which cannot be obtained by other means. There are few ways in which such marked relief is given to abdominal pain as by the application of a poultice in this manner.—*Dr. T. Lauder Brunton, in Brain.*

OEDEMA of the Epiglottis is often one of the first signs of pulmonary phthisis. Drs. Coomes and Reynolds have recently reported numbers of such cases, in which they were led to suspect tubercles in the lung on account of œdematous epiglottis when none of the ordinary physical signs of organic lung disease could be detected. The epiglottis often becomes fissured before death. A number of cases are recorded by the gentlemen named, where fatal results followed within a few months, and sometimes in a few weeks after occurrence of the œdema.

PROFESSOR SNELLEN, of Utrecht, uses a current of air, passed through liquid carbolic acid, in preference to the spray, in antiseptic surgery. The carbolised air tends to diminish capillary hæmorrhage from cut surfaces, while the spray, by maintaining moisture, encourages bleeding.

Dr. Symonds has been appointed Surgical Registrar in place of Mr. G. A. Wright, F.R.C.S., who has resigned.

GUY'S HOSPITAL GAZETTE,
JUNE, 1879.

The Editor is sorry that owing to want of space several communications cannot appear.

THOSE subscribers to the "Gazette" who have left the Hospital some little time will be surprised to hear that the late Mr. Stocker's house has been turned into a "Nursing Home." At the Home board and lodging are provided for a number of ladies who professedly wish to learn the art of nursing. Every one will of course say "What an excellent institution, it is just what is wanted." With this we perfectly agree, and before the Home was started always thought that the opportunities which such a vast hospital as Guy's offered for the teaching of nursing were thrown away. It was thought that Guy's would be famous in one more of the many branches of medicine and surgery, and that the fact that a lady had learnt nursing at Guy's would always be a guarantee that she was an excellent nurse. Unfortunately, however, the scheme has not been as successful as it was hoped it would be. The complaints one hears from the students chiefly, and also from some of the Sisters, about the way in which the ladies from the Home do their work, are legion. We might fill the "Gazette" if we were to put down all the grumblings we have heard, of which perhaps the most common is that the ladies profess to take the temperatures correctly, whereas if they are taken directly after by a competent student he finds the majority of them incorrect. Another favourite complaint is that the ladies always take the greatest interest in *witnessing* operations, but rarely show any desire to assist in the drudgery, such as washing the sponges, cutting the dressings, &c.

As, however, we wish to be perfectly fair and impartial, it is only right to mention that we also hear of complaints from the ladies themselves. Their favourite grievance is that nobody teaches them anything, and when they enter a ward no one takes any notice of them so they are compelled to loaf about and "pick up the crumbs from the rich man's table." Some have felt this so keenly that they have left the Home, and thus we have lost those most willing to work.

Before trying to rectify these various grievances it is obvious that we must find if there be any truth in them. As far as we have been able to observe since the Home was started it seems that the students and sisters have just cause of complaint against the ladies, and in one or two cases it is no doubt true that the ladies from the Home are taught nothing by the sisters, but then this is owing to the shamefully imperfect way in which the ward work is done by those who come here to waste their time and to see if they should like to be medical students. It is only a case of the righteous few suffering for the sins of the many.

The ladies at the Home may be fairly divided into two classes. Those who come to the hospital with a real and earnest desire to be efficient nurses and wish to throw both body and mind into their work. The other class contains those who having nothing better to do; think that to come to a hospital and dabble in nursing is an excellent way of killing time and preventing ennui. Every one's sympathy must be with the first class, whilst no one can have much sympathy with the idlers in the second class. A woman is preeminently fitted for attending the sick and by skilful nursing relieving pain, let such as are in earnest take Florence Nightingale as their guide. The second class are not wanted at Guy's and we can get on much better without them. This is a place of work and not a place to loll over the rails of the operating theatre staring at an operation which it is impossible to understand without a thorough knowledge of anatomy and surgery, and which no lady would ever be called upon to perform unless she were a regular lady doctor properly qualified. The ladies would be benefiting themselves and every one else much more if they would learn to make poultices, put in draw sheets, wash and carbolize sponges, spread ointment, prepare patients food, make beds, and do the work usually left for the nurses. Many of the ladies as we before said really wish to learn such details of true nursing, but they say "we cannot, no one will teach us." The reason of this is that the sisters were so vexed with the way that some of the ladies did their work, that now they will not teach those who are willing to learn, and strongly object to

having ladies from the Home in their wards at all. This of course is most unfair and quite prevents any one from learning nursing. The sisters should discriminate a little and teach those who are willing to work in reality, and on the other hand totally ignore the mere dabblers. If this were done we should not have ladies leaving the home because they cannot be taught anything, and Guy's would be famous for efficient lady nurses. As it is now no one who has seen the results of the present system can conscientiously recommend a lady friend to come to Guy's to learn nursing. We are well aware that many come to the home, and that those trained there get appointments, but this is due to the renown of Guy's as a Hospital, and not as it ought to be to the fame of its nursing home.

It cannot be too emphatically stated that those who wish to learn nursing must begin at the bottom of the ladder and work their way upwards. They must take part in the work allotted to the nurses in the wards, and we would suggest that each lady on entering the ward should have allotted to her a certain number of beds and that her duty should be to make them, wash the patients in them, and in fact look after every thing connected with the beds, being at the same time under the supervision of the sister. Each sister should in this way give out some of her beds to the lady, and if the latter were really willing to work, the sister ought to teach and assist her, if not she should be asked to leave the ward and make room for some one willing to learn thoroughly.

There is, in conclusion, one other point worthy of notice, and that is the dissatisfaction that the nurses naturally feel at the present system. The ladies assist at the dressings and do all the easy work whilst it is left for the nurses to do the rougher parts, such as we have before pointed out the ladies should do. This it is unnecessary to say is most unfair.

We have been induced to insert this article because we cannot help thinking that with a little management and tact, especially on the part of the inhabitants of the "Home," and also on the part of the Sisters, the present very numerous and very objectionable grumblings and growlings might be lessened, so that we should all pull together and every one would cease to complain.

THE Presidents of the Physical Society will soon begin to collect the names of men willing to read papers next winter. We hope and trust that this year we shall have no difficulty in filling up all the evenings and we would advise men to begin to look about them for the titles of their papers. This we fancy is often the chief difficulty, for men are frequently willing to read a paper if they can only think of a subject. As a proof of this it is only necessary to look at the list of last year's papers, when it will be seen that some of the authors were not able to decide on the title of their papers before the list was printed. We therefore will make a few suggestions of suitable subjects. 1.—Cough and Expectoration. 2.—Headaches. 3.—Fits. 4.—Blood Spitting: its Causes and Treatment. 5.—The ratio of Pulse, Respiration, and Temperature. 6.—Causes and Treatment of Tedious Labour in uncomplicated cases. 7.—Vomiting. 8.—Traumatic Lesions of the Eye. 9.—Natural History of Syphilis as studied in the out-patient department. 10.—Gonorrhœa and Leucorrhœa. 11.—Physiological Action and Therapeutical use of Emetics. 12.—Pains: their Etiology, Pathology and Treatment.

REPORTS OF TWO EXTERN CASES.

By EDWARD PENNY.

The two following cases may be of some interest, if not from their own intrinsic value, at least to warn against a hurried disregard in diagnosis of facts, which may be and in these cases were importantly connected with the symptoms present, though at first the connection may not be clear. They occurred to me in an afternoon's experience as Junior in Charity.

The first case is that of a multipara, third child, confined after a rapid labour about 1·30 p.m. No extern could be obtained until about 3·30 when Mr. Unicume took charge of the case. At 4·30 I received a note from him, saying that although only very slight hæmorrhage was taking place and the placenta was safely removed, he was somewhat alarmed at finding himself quite unable to keep the uterus in a contracted state for more than a very short period at a time. On arrival I found the patient with a quiet pulse barely over 60 per minute. Placing my hand over the usual position of the uterus, an impression passed through my mind that there was another child, so full did the abdomen feel, a moment later, however, the idea was dismissed as my hand grasped the uterus which was lying to the right of the middle line almost in the right iliac region. Disregarding

then the tumour which had first attracted my notice and hastily ascribing it to mere fulness of the abdominal walls, I directed all my attention to the uterus, which as the extern had described was behaving in a very disagreeable manner, now contracting up under the stimulus of the hand to a most respectable orthodox size, now immediately after in spite of the most vigorous grasp steadily dilating, communicating to the hand in so doing that peculiar sense of "liquefaction" (I do not know a better word to express it) which must have made the heart of many an extern beat quick. This state of things lasted until about 5·30 when after repeated doses of ergot, the uterus became at last better behaved, the periods of contraction lasted longer and were more easily maintained, while the dilatations were correspondingly less in frequency and degree; seeing which and that the pulse remained quiet, and being especially influenced by the fact that as no hæmorrhage to mention took place, even after the most marked relaxation, the uterine sinuses must be plugged, we decided to apply the binder. During the operation our patient seemed to be very distressed, and just as we had inserted the last pin a loud dripping sound was heard, while the woman in alarm cried out "What is that coming from me?" Looking down, we saw to our horror, soaking through the bed and streaming over the floor, a red sanguineous fluid. Tearing off the binder with a dreadfully guilty conscience, and feeling that the woman who was losing blood to such an extent as this seemed to be could have very few minutes to live, I pounced on the uterus. To my delight and astonishment it was firmly contracted. Seizing the patient's wrist, there was the pulse beating almost as calmly as before. I was utterly at a loss, when a sudden thought flashed through my mind. Turning up the clothes not a clot was to be seen except those resulting from the slight flooding which had occurred long before. Looking again and more carefully at the red stained floor, the fluid appeared thin and watery though red in colour. The rapidly asked questions "When did you pass water last?" "Are you in the habit of holding your water long?" brought the expected answers, and the mystery was explained. By means of the binder we had actually squeezed out the contents of an enormously distended bladder, which had for hours been preventing its immediate neighbour, the uterus, from contracting as it should, had kept us in attendance a large part of the afternoon and had finally well nigh frightened us out of our wits. The urine straining through the blood stained mattress had become charged with blood colouring matter, hence its red tint. However, "All's well that end's well," and we had no further trouble, the uterus remained well contracted, still occupying its old position to the right of the median line. The patient informed us that she worked in a factory, where also a number of foreign hands were employed, to avoid annoyance from whom she was in the habit of passing very many hours without emptying the bladder. Motives of delicacy no doubt prevented her from telling us what was taking place during the application of the binder, and when alarmed at the dripping sound which followed, and which she unreasoning and by instinct connected with flooding, I suppose she was too terrified to think of saying what would have at once dispelled our fears.

In conclusion, I may remark that though most most assuredly I can claim anything but credit in the diagnosis of the case, I think some excuse may be found in the extenuating circumstances that the uterus was so easily within reach, lying as it did so much to one side, that the swelling caused by the distended bladder gave rise to a protrubence of the belly, which as the woman lay on her left side was not unlike in shape to that pendulous condition which results from adipose tissus in the parieties. Added to which when one has so often watched the fœtal head in its descent, pressing on the bladder and causing discharge of its contents. I think that distension of that viscus would hardly occur to one as a probable condition soon after labour was completed. Of course, on the other hand, I ought to have noticed that the uterus was not in the median line, and therefore might be quite uncovered by a full bladder, that the abdominal tumour was not to the touch at all like that of mere fat, and that the number of hours elapsing since the birth of the child would allow of much urine being secreted, besides which I suppose the rule that the bladder is emptied by the descending head is not without exception, especially when as in this case the vicus must been much above the pubes even at the time of the labour.

On leaving this case I went on to the other, that of a young woman confined about a fortnight previously. I had seen her a week earlier for cracked nipple of the left breast with retraction, which prevented the child sucking on that side. That difficulty, however, was overcome by the use of a glass suction apparatus. My first enquiry on arriving was as to the affected nipple, the reply being that it was better, but I had now been summoned on account of the patient's suffering from severe pain in the left side, most marked in the axilla and running thence round to the spine behind. Her pulse was quick, T. 104°, breathing rapid. With thoughts of pleurisy and pneumonia in my head, I proceeded to examine her chest, but not a single sign of chest disease could I find in it neither was there any cough or expectoration. At a loss, I was just putting off the anxious enquiries of the friends with some humbug about "chest trouble" when the nurse, almost as if by chance, raised the left breast and called my attention to a small, red, indurated spot on its

under surface, unexposed in the natural position of the organ. Here was the explanation of the pain and high temperature; the ulcerated nipple had led to inflammation of the breast, and this had given rise to pain referred to the axilla and back rather than to the breast itself. I should add that although the patient told me the nipple was better, she added that she had left off suckling on the left side, which remark I at the time failed to note the importance of. No doubt had I done so and made further enquiries, I should have found that the use of the breast gave rise to pain, and this would have led me to examine the organ at first and not for the second time in one day be shewn as it were by chance how I had failed in diagnosis.

In connection with the first case is a further interesting point, bearing on the use of ergot after labour in preventing the formation of intrariterium clots which are the acknowledged cause of after pains. We had during the afternoon given our patient two full teaspoonfuls of pulv. ergote and a dr. of ext. ergotæ liq. and I had, before the binder was applied, and the cause of our trouble explained, written a prescription containing large doses of ergot to be taken three times daily; this I neglected to alter before leaving. The extern calling a few days later found the woman comfortable but rather alarmed at the complete absence of colour from the cochial discharge which had characterised the whole period since her labour. A condition which her experience of her former labours led her to regard as abnormal.

BACTERIA & THEIR RELATION TO DISEASE.

By J. M. HOBSON.

[We regret that, through some inadvertence, several typographical errors occurred in this article in the last number of the *Gazette*, most of which are so obvious that they need no correction.]

LACTIC ACID FERMENTATION.—In the Microscopical Journal, 1873, there is a very interesting paper including observations on this subject by Professor Lister. The organism of lactic acid fermentation is called by Lister *Bacterium Lactis*; it is motionless and very minute and its cell-elements are commonly connected together in *leptothrix* (slender-hair) form, (see pl. xx. fig. a., op. cit.). Bacterium lactis seems to be rare out of dairies, for purified milk exposed to contamination from the ordinary atmosphere did not undergo the acid fermentation.

From a glass of sour milk Lister inoculated pure urine; from the urine he inoculated some Pasteur's fluid; from Pasteur's fluid, urine; from urine, some more urine; and, finally; from the last glass of urine he inoculated pure milk. Now the forms were not the same in these several media. In the urine there was always a large spirillum form developed; in the Pasteur's fluid there was, first, a short form but larger than Bacterium lactis, and when this disappeared, it was followed by very small actively moving forms.

Professor Lister, in his lecture at the Pathological Society in 1877 (Br. Med. Jour.), alluding to these experiments said that he related them one day to an eminent physiologist who before had thought that Bacteria might be merely independent accompaniments of fermentation. When he had heard the story, this eminent gentlemen said, "well I am convinced." Upon this, Lister bethought him that he would test his experiments again to see if there had been any fallacy. He so diluted some sour dairy milk with boiled water (one in five millions) that he might expect to have not more than one Bacterium lactis— this organism being much more abundant in sour milk than others—in the minute portion that he took up, and then added such a portion to each of five glasses of purified milk. In four no change whatever took place, while in one pure lactic acid fermentation took place. Urine inoculated from this developed very slowly a pigmy progeny of Bacterium lactis, and none of the gigantic forms obtained in the former experiments. From the urine he was able to get back the lactic acid ferment. Lister says that the growth in the urine was so slow that, had he got the larger forms along with them, he would certainly not have noticed the smaller ones. Pasteur's fluid could not be inoculated from the pure lactic acid fermentation.

The first results are interesting as shewing how a really grave mistake may be made by even the best observers. The truth seems to be this. Milk may become inoculated with many forms, but Bacterium lactis, if it gains access, will take the ascendency over the others. If, however, we can *handicap*, so to speak, this one form by taking a drop of the milk and adding it to some other medium, some other form which had before been kept down, may start into active development, and Bacterium lactis may in its turn be kept low for want of proper nutriment. In the urine Bacterium lactis developed a pigmy progeny, in Pasteur's fluid it did not develope at all, though it was not killed. What happened then was this. Several forms were added to the first urine from the sour milk, but only the large spirillum-form developed freely; then in Pasteur's fluid neither spirillum nor Bacterium lactis developed to any extent, if at all; in *urine II and III* spirillum had its chance again, and Bacterium lactis though it had run the risk of being left out altogether, yet did get into *urine II*, and developed there to some extent, for Lister says he was able to get lactic acid fermentation back again from the urine. We must remember that there are several distinct fermentation processes, if we may so call them all, which can take place in milk; for example the butyric more than one chromic, and a very remarkable glutinous kind, where Lister, by dipping the point of a needle into the scum which had formed on the surface, was able to draw out a thread scarcely visible and over a yard in length. It is not difficult to understand now how this apparent *protean* nature of one species was seemingly discovered. The fact that the *plasticity* of one species has in the above case not been proved, does not invalidate independent arguments in favour of such plasticity in other species or in Bacteria generally. To this question we shall return presently.

Before passing to the second division of our subject, the Pathological relations of Bacteria, let us see if we know anything about *form-relationships* of these organisms. Whether Bacteria belong to the fungi, or the algæ, or indeed to either, appears doubtful, though Cohn in 1872 was inclined to place them among the latter. We know that the life-cycle of many cryptogammic plants includes forms, sometimes several, very unlike each other. Here is a very remarkable example which I have found in Sacks' Botany. On the leaves of Berberis vulgaris, in the spring, yellowish swollen spots are found due to the growth of a fungus within its tissues. The fructification has two forms which were thought formerly to belong to two distinct fungi. The spores on escaping germinate in the stomata of grass and from their mycelium arise *uredo-spores*. The uredo-spores germinate on the grass for successive generations through the summer. Then the production of *uredo-spores* is replaced by that of *teleuto-spores* which remain quiescent through the winter. In spring the teleuto-spores

germinate and give off a *promycelium* which bears *sporidia*. The sporidia germinate only on the leaves of Berberis; and so the cycle begins afresh. Mr. E. Ray Lankester, in the *Microscopical journal, 1873 and 1876, describes what he calls Bacterium rubescens*. He found in some glass jars, which contained some dead and putrefying animals, a growth on the sides of the jars, and on leaves at the bottom, of claret-coloured filins. Lankester, alluding to Haeckel's researches on calcareous sponges, and taking them as an illustration, remarks that classification according to similarity of form, may be as artificial in the case of Bacteria as it has proved to be in that of calcareous sponges. Haeckel found that the really trustworthy *race-marks* were the spicules, structures more deeply connected with the vital processes of the living elements than form is connected. There are *form-series* which constitute the fixed *life-cycle* of species in several plants and animals, and there are form-series in which the succession is irregular; in the former we have a constant succession of "hereditary recapitulations"; in the latter an inconstant succession of adaptations. To this last Lankester refers Bacterium rubescens, and uses in connection with it the expression "Protean" species. He thinks he is justified in taking colour as a race-mark of this species, and without it he would not have been able to trace the continuity of forms, for they were mixed up with many other non-coloured Bacteria. Lankester thinks that the colour was not an accidental staining, nor inbibed by colourless forms through contact with coloured ones, because, in the first place, the colouring matter—Bacterio-Purpurin—of which he gives the spectrum bands, is insoluble, and, in the second place, some zooglæa forms of colourless Bacteria in close contact with the coloured ones were not stained. Again, writing in 1876, he says, "the main facts on which I rely for the identification of the various forms and aggregations of plastids, assigned to Bacterium rubescens as members of a series or physiological species, is their agreement in colour. I assume it to be highly improbable that two or more specifically distinct organisms would develope in a jar simultaneously, each tinted by a peculiar substance, Bacterio-purpurin. At the same time the hypothesis that the various forms observed do form a series belonging to a protean species, is confirmed by the observation of all conceivable annectant forms." The tint varies in response to definite variations in the conditions of growth. A bluer peach tint occurs when the growth is young, as seen in pl. xxii., fig. 3., Micros. Jour., vol. 13. The redder colour is seen when the growth is more luxuriant and is especially brilliant when it forms large homogenous discs. Variations in size and shape and mode of aggregation are of interest to us insomuch only as they indicate the great variety of form which one species may present. The plates appended to Ray Lankester's papers in 1873 and 1876 will indicate fully these variations in size and shape, while the later executed one indicates shades of colour. The forms were spherical "biscuit-shaped," filamentous, irregular, or discoidal. The modes of aggregation were also various. Some had a distinct uncolored envelope, some had none, in some the coloured part was continuous and homogenous, in others there were points of it, either in a colourless substance, or in a lighter coloured protoplasm. The size varies very much too. The discoid plastids may attain to a diameter of $\frac{1}{150}$ in., whilst the largest biscuit shaped plastids scarcely exceed the $\frac{1}{3000}$ of an inch in length. In plate III., fig. 4, are represented biscuit shaped plastids not exceeding $\frac{1}{20000}$ inch in length. They were the only forms obtained from pans for macerating bones at St. Thomas's Hospital which are kept going for many years, while an uniform temperature and an excess of decomposing animal matter are maintained. The very rich colouring matter gave the characteristic absorption bands of Bacterio-purpurin. Ray Lankester remarks that "under these circumstances it is not unlikely that a particular 'breed' or 'race' of the protean Bacterium rubescens has become established." He thought he would see if by changing their conditions of life he would affect their form or colour in any way, and accordingly transferred some of the red scum from the macerating pans to distilled water in a test tube. At the end of three months the red sediment was examined and found to contain plastids greatly increased in size, some of which now contained two, three, or more, brightly red, highly refracting granules in their substance. "This change of size and character in the plastids in attendance upon change of environment (removal of excess of nutrition) warrants the inference which I had already drawn from the large range of variation in the form and mode of aggregation of the plastids of Bacterium rubescens that we have in it. * * An example of an organism which is highly susceptible of change of form in response to minute changes of life conditions, and in which such changes of form have full license, because *form* has very little importance in relation to the *essential* chemical phenomena which characterise the life of this class of organisms and give them specific limits."

Again, what Lankester calls *macroplasts* or reproducvtie discs were found when the red growth was allowed to dwindle down from diminished nutriment. They were of many sizes and of different shades of colour, but their tendency was to form spherical shapes. Their average size was $\frac{1}{700}$ inch, but some attained to $\frac{1}{150}$ inch. When the nutriment was increased again they were replaced by the growth of the of the ordinary forms of Bacterium rubescens. I will just give one quotation which I have found in the Microscopical Journal, 1877, in corroboration of Lankester's views. It is from a paper by Dr. Warming, of Copenhagen, of whom the reviewer remarks, that the extent of his observations "entitles any opinion he may put forward to a most respectful hearing." "Les Bactéries sont douées en réalité *d'une plasticité illimitée*, et je crois qu'il faudra renoncer au système de M. Cohn et de quelques autres savants, qui caractérisent les genres et les espèces d'apres leur forme" (note to p. 86).

I said at the beginning of my paper that the statement of Cohn in 1872, that transverse fission was the *only* mode of reproduction in Bacteria, was not true, and Cohn has himself renounced it in that he has described the formation of spores in Bacillus, which I have quoted too in the last number of the "Gazette." Since reading the account of Cohn's researches on this point, given by Dr. Roberts, I have met with a fuller description in the Journal from which I have just quoted (p. 83). "In the homogeneous interior of the *Bacillus* fibres (Bacil: Subtilis) there appeared highly refractive corpuscles, each of which consisted of a cylindrical doubly-contoured spore, always were these arranged in rows. To follow these out, glasses *a'immersion* were required (as much, sometimes, as 1650 diameters); the Bacillus fibres are there seen not to be truly unjointed, but to consist of joints, each of which is about four times as long as it is broad, within each is a spore, which does not quite fill the space. * * * * The chains of Bacilli separate into their constituent joints. When the spore leaves the mother-cell it possesses a gelatinous envelope, which is not easily affected by water. But development goes no further in the same infusion; if some be, however, put with an infusion which has not passed through the bacillar fermentation, the spores will be seen to swell, and to push out at one end a tail, so that they become 'köpfchenbacterien,' like in appearance to the spermatozoa of vertebrates (Fig. 6, pl. xx., Jour. Micr., Sci., July 1876); the highly refractive bodies disappear, the tail begins to move and to get itself jointed; soon, but care must be taken to keep out *Bacterium Termo*, felted masses of bacillar fibres will be evident to the naked eye."

I will defer Koch's account of the development of Bacillus anthracis till we discuss the disease with which it is so intimately connected—*Splenic Fever*.

To return to Lakester's *macraplast* form of his coloured bacterium. Examining these with an amplification of over 1100 diameters, he found some quite homogenous, others finely granular, others less finely granular, and so on up to

those which showed isolated plastids packed together within a colourless envelope. Lankester thinks he has here evidence of a distinct form of reproduction.

In the abstract given of Cohn's memoir on a new Alga, *Crenothrix polyspora*, one of the modes of reproduction is described. "The 'Microgonidia' are the most frequent spores, and seem to occur constantly in the thicker filaments. The cells of these increase first in width, and simultaneously become divided transversely, so that they form a series of discs, their length being scarcely more than a fourth of their width: these then divide vertically into four enneate segments, and the latter, again, in a manner not easily followed out, repeatedly into a number of minute portions, designated by the author microgonidia. * * * The emerged gonidia have round or somewhat elongated figures: they show a central vacuole, but no membrane; their shorter diameter varies from about 1 to 3 m. m. m. [$\frac{1}{1000}$ to $\frac{3}{1000}$ millimetre]. They are often twice as long, and then constricted at the middle; many are transversely divided; they do not apparently move beyond a very slow rolling motion." In this manner, in course of time, the *Crenothrix* threads may emit the whole of their contents as gonidia into the water, where they lie in masses connected by a common mucous matrix. The further development of these gonidia Cohn was unable to follow, but he draws attention to the resemblance between them and certain conditions of Bacteria. In the water in which *Crenothrix* occurred were zoogloea masses containing minute cells, 5·25 m. m. m. long and about a fourth that width, together with some free forms of the same, which presented all the characters of *Vibrio lineola*, Ehrenberg. "Now, the isolated microgonidia of *Crenothrix* resemble certain of the larger *Bacterium-cells*, occurring in the same water, the more so as both were mostly met with constricted at the middle, that is, in various stages of transverse division, and combined together by a common mucous matrix." Cohn puts both the Bacteria and Crenothrix near the oscillariæ. (Jour. Micr. Sci., 1873, P. 163.)

Dr. Eidam has worked at the effects of temperature and of drying on *Bacterium termo* in Cohn's laboratory at the University of Breslau. He used Cohn's cultivation fluid of which the following is the formula:—

Potassium phosphate	1	0	
Magnesium Sulphate	1	0	
Ammonium Tartrate	2	0	
Calcium Chloride	0	1	
Distilled Water	200	0	

"If kept at 50° C., this solution will remain quite free from Bacteria. At 5° C. there is no reproduction, but at 5½ reproduction began, though very slowly, and so up to 10°; above that point reproduction began to be much more energetic, and so continued up to 30° to 35°; above 35° it fell, at 40° the Bacteria fell into heat-rigor, and died at 60°." (Micr. Jour., 1876.)

But in tubes to which albumen had been added there was a smell of cheese at 44° to 46°, when Bacteriam termo was in heat-rigor. Microscopically *Bacillus* filaments and lasting spores were found, in fact butyric fermentation was taking place. And in a later pnblished observation Bacilli were found to increase actively at 47° to 50°.

Heating *Bacetrium termo* at a *dry* temperature of 50° C. for even six hours did not suffice to kill it.

There is much yet to learn about the Natural History of Bacteria, but we must now pass on to that part of our study where Natural History is overshadowed by Pathology and receives, *for us*, its raison d'être.

Correspondence.

The Editor wishes it to be distinctly understood that he is not in any way responsible for opinions expressed by Correspondents.

TO THE EDITOR OF THE "*Guy's Hospital Gazette.*"

Sir,

May I through your columns call attention to the teaching of Hygiene at Guy's; or rather, I should say, to the teaching of Sanitary Science to the profession generally. I do not wish in any way to reflect on the Hygiene Lecturers who have at various times held the appointment at Guy's. If it is sufficent to teach some 20 or 30 students just as much Hygiene as can be picked up by a now and then attendance at 6 lectures delivered during the Summer Session, then the lecture now being delivered are no doubt perfectly adequate for all practical purposes. If, however, Hygiene and Public Health have given to them their true value; if they are considered from a national instead of from an examinational point of view, it is surely a disgrace, not to Guy's, but to the profession generally, that there are hardly half a dozen men annually turned out from all our metropolitan schools competent to pass a valuable opinion on the mere rudiments of these subjects. No doubt the chief fault lies with the examining boards. So long as these compel students to spend two out of their three or at most four years of study in learning "the distribution of nerves and vessels," the "anatomy of snails" and "the development of chicken"—facts the minater parts of which are forgotten within three months of the examinations,—so long will hospital teaching go on as it is now and so long will ordinary medical men have no knowledge as to the prevention and hygienic treatment of Disease.

To detect the entrance of Sewer gas from drains into a house; to trace an out-break of Typhoid or Diphtheria to its true source; or to find out when Arsenical Poisoning is due to a wall paper or paint; requires special training and practical knowledge. It is perhaps impossible that all students should acquire this power just as it is impossible for them to master the other special branches of their profession. But it is possible and in the highest degree important that all should have a general and sound knowledge of Sanitation, while a fair proportron might acquire a more special experience. Sanitary Improvement is of importance to-day and seems likely to be the subject of the future, the chief difficulty to its more rapid progress being the ignorance of the masses. It is too much for human nature to expect a man of small property to spend half his income in improving his cottages, whilst and all the time, he is enjoying the sewer gas, which he breathes from his cess-pool and drinks from his well; and until sanitary knowledge is diffused, sanitary legislation is impossible. Can we expect this diffusion whilst medical men

are ignorant of its general principles? and does it not seem that Hygiene ought to be made a compulsory part of every man's medical outfit. Might I then suggest that six lectures, however able or exhaustive they may be, to some 20 men are altogether out of proportion to the importance of the subject and that Guy's should make some radical reform in this matter. If more lectures were given and attendance on them were made compulsory, some improvement could be made; but the tone need seems to be an arrangement with some one who devotes himself entirely to sanitary work and such an one would not be hard to find in the metropolis, where we are in the centre of all sanitary work. Not only could such a man give demonstrations as to how to conduct enquiries, but he could (as no member of our staff however able and willing can) afford opportunities to men for practically investigating the outburst and spread of epidemics in the metropolis. To any one thinking of making sanitary work his aim in life, the value of such a chance would be immense; while the actual work thus accomplished by an able Sanitary Inspector and senior students would be of immense value to the profession and would reflect honour on the hospital. That an increasing number of men will each year make sanitary work their study is only to be expected: and by the Study of Hygienie on a sound footing, Guy's would place herself in a position with which no other school could compete, and would attract a class of men who at present have no place to go to.

I am,
Obediently yours,
HENRY DAVY.

TO THE EDITOR OF "*Guy's Hospital Gazette.*"

Sir,

As the training received by the lady probationers at this Hospital causes much dissatisfaction, one who has practically observed the working of the scheme may perhaps be allowed to offer a few suggestions which might lead to its improvement.

Let every lady clearly understand that she is here to do nurses' work, the unpleasant part as well as the pleasant, and that there is to be *no playing at nursing*. Why not treat the lady probationers exactly as the nurse probationers while in the wards, except as regards the carrying up of heavy things and the scrubbing of lockers, neither of which accomplishments are *necessary* to a nurse's thorough training. Give the Sisters *complete* control over the ladies in the wards and let there be a clear understanding that they are required to do anything the Sister may see fit to tell them to do. Have fixed hours for ward duties, and require them to be strictly adhered to, so that such a thing as a lady probationer leaving her ward, without special permission of the sister, should be unheard of. Then, however, let there be no cause for the complaint that the ladies have nothing given them to do, and that they are told "the work goes on quite as well without you as with you," which makes them feel they are of no use in the ward. Give every lady probationer certain duties to perform for which she shall be held responsible, and let it be the duty of the Sister to point out all mistakes, and to teach the ladies all they can. If these or some such rules were strictly carried out, and there was less of that spirit of indifference which characterises many of the Sisters actions towards the ladies, those who objected to perform the so-called menial duties of nurses, or who regarded nursing in the light of an amusement, would see that Guy's was not the place for them, while those desirous of real work would have opportunities afforded them of carrying out their wishes. Medical certificates of health should be required before any lady could be admitted to train, and even then if after a month's trial she were found to be physically unfit for the work, she should be requested to leave, thus rendering it impossible to fill the training home with semi-invalids. The Home, too, should be placed under the charge of some lady who has herself been trained for nursing, who understands its needs and difficulties, and who could quite sufficiently teach the ladies bandaging, &c., and do away with other useless lectures now given. It must be obvious to every one who considers the question that unless the present management and training of the ladies is entirely changed, one by one the real workers will leave utterly disgusted with the training they are supposed to have received, and the Home will degenerate into kind of a Ladies' club, always full, perhaps, but with ladies who regard hospital work as an amusement, and who have no objection to spend a day or half a day in the wards looking on whilst others do the work. Hoping you will find room for this letter and that it may in time lead to the necessary alterations,

I am,
Yours, &c.,
X.Z.

THE LATEST NOVELTY comes to us from Germany. Prof. Huerter, of Griefswald, has made a variation of the telephone, called by him the "dermatophone," by the use of which the capillary circulation of the skin is heard.—*Centralb. fur Med. Wiss.*, Dec., 1878.

THE COUGH MIXTURE of Sir W. Gull, of London, said to be efficacious in whooping-cough, is composed of equal parts of cod-liver oil, honey and lemon juice. Dose, a teaspoonful or two, according to age, three times a day.—*Monthly Magazine of Pharmacy*, March.

APPOINTMENTS.

RESIDENT OBSTETRICS.—J. Poland (June), E. C. Beale (July), Pedley (August).

SURGEONS' DRESSERS.—L. C. Wooldridge (Mr. Forster), Crew (Mr. Bryant), J. S. Crook, Whitworth (Mr. Durham), B. N. Rake, H. H. Bovill (Mr. Howse).

GUY'S HOSPITAL GAZETTE,
JULY, 1879.

NOTES FROM A CLINICAL LECTURE.

DELIVERED BY MR. CLEMENT LUCAS, MAY 23, 1879, ON CANCER, ABSCESS, AND ADENOMA OF THE BREAST.

Taking a case of cancer first, Mr. Lucas commenced by asking how a pathologist would define a malignant growth, and gave in answer the following characters.

1.—It infiltrates all the tissues in its neighbourhood irrespective of structure.

2.—Recurs after removal.

3.—Spreads by lymphatics to neighbouring glands.

4.—Causes secondary deposits in the internal organs.

5.—Has a milky juice on section.

6.—Consists microscopically of areolar stroma including alveoli occupied by masses of epithilioid cells without intercellular material.

Using these signs to interpret the clinical phenomena, he said that only the 1st and 3rd were of service in diagnosis. The infiltrating character of cancer caused the skin after a time to become adherent to the tumour, and later on the breast might become fixed to the pectoralis muscle, conditions not associated with simple tumours. The lymphatic glands in the axilla become enlarged, and this is an important sign of cancer. But both these conditions, viz.; adhesion of the skin and enlarged axillary glands might result from inflammation ending in abscess of the breast; hence alone they were not sufficient for the completion of the diagnosis.

He next sketched the course taken by a typical case of cancer of the breast. Commencing as a small hard lump in the breast of a woman between 35 and 50, in whose family there may or may not be a cancerous history (in the case lectured on, the patient's mother died of cancer of the uterus), the tumour enlarges more rapidly than a simple tumour and often gives rise to lanceolating pain, though this, as in Mr. Lucas's patient, may be altogether absent in the early stages. It usually causes some retraction of the nipple and then begins to draw upon the skin. Often before the skin is actually infiltrated, dimpling may be produced by raising the breast in the hand, the depressed points indicating the site of bands uniting the skin to the growth. Later on the skin becomes quite adherent. Now the glands in the axilla are felt enlarged, and the superficial veins over the breast become distended owing to the deep veins being occluded. If no operative interference be undertaken, the tumour after a time ulcerates, discharges, and bleeds, and then the patient's health becomes gradually reduced, and the pinched, pale, yellow, unhealthy appearance, known as "cancerous cachexia," is produced. Enlarged glands appear above the clavicle and cause neuralgic pains in the head from pressing on the cervical nerves, the arm becomes œdematous from pressure on the axillary vein, and agonising pain in the arm and hand is induced by glands pressing on the nerves of the brachial plexus. Finally, secondary deposits occur in the lung, and may be indicated by cough, pleurisy, and perhaps hæmoptysis. The treatment is to excise the *whole breast*, and the earlier this is done the more remote is the chance of recurrence. The incisions are made in the direction of the fibres of the pectoral muscle for the following reasons.

1.—If necessary, you can extend your incision into the axilla to remove any glands enlarged.

2.—The pectoral muscle if infiltrated, can be partially removed.

3.—Because a vertical cicatrix would be stretched by any upward movement of the arm.

A patient Mr. Lucas operated on four years ago has had no recurrence in the position of the breast, but a year ago, some glands appearing in the axilla were removed; and she is still quite in good health and free from the disease.

Chronic breast abscesses present many clinical features like cancer, and mammary glands have been excised in mistake, for simple abscesses. The following case well indicates the resemblances and indifferences.

E. R. æt. 28, a pale, thin, delicate woman, whose father died of Phthisis, came among Mr. Lucas's out-patients on Feb. 8th. She had been married 8 years and had four children. Two years ago she had an abscess in the left breast for which she was treated at Guy's, and recovered. She was last confined nine months ago and suckled her child 8 months, when it died. About eight weeks ago she noticed the breast enlarging; but during the last week it has rapidly increased in size and caused such agonizing pain that she has been unable to obtain any sleep. The swelling, about the size of a flattened orange, is situated on the right side of the nipple. It is irregular on the surface and elastic. The breast is lax and the nipple slightly retracted. There is no redness of the surface. The tumour is not distinctly adherent to the skin, but the latter dimples when pressed up. The glands in the axilla are enlarged. Fluctuation can be be felt on palpation. It was tapped with trocar and canula and pus escaped: afterwards it was opened by incision.

Regarding this case independent of its history, it might readily have been mistaken for cancer; indeed, the majority of students who examined it fell into this error. The retracted nipple, partially adherent skin, rapid painful growth, and enlarged axillary glands, were the points in which it resembled cancer. But the history told us that there had before been an abscess in this breast, and the swelling appeared about the time suckling was suddenly stopped by the death of the infant. The patient's age was too young for cancer, and the swelling instead of being of stony hardness was elastic and fluctuating. A grooved needle set any doubt at rest. This abscess was *intra-mammary*, occurring in the substance of the gland tissue. Such abscesses cause the most agonizing pain owing to their being confined by fibrous tissue. Small abscesses probably resulting from an inflamed lymphatic or vein, sometimes occur between the skin and gland, hence called *supra-mammary*, they cause little pain. A third form is the *sub-mammary* abscess which, developed in the cellular tissue beneath the gland, pushes the whole organ forward. The rule in treating mammary-gland abscesses is to make

the incision radiate from the nipple (to avoid injuring the ducts), and to make it in the most dependent position.

Mr. Lucas next related a case of adenoma of the breast which had been under his care. The tumour had existed for twelve years and in this time had only reached the size of a walnut. It had in no way affected the patient's health. The chief clinical features distinguishing these tumours from carcimona are:—1st. The age of commencement, usually between 20 and 30. 2nd. Slow growth. 3rd. Absence of pain. 4th. No infiltration of surrounding tissues, adhesion to the skin, or retraction of the nipple. 5th. No enlargement of the axillary glands. 6th. They are freely moveable. 7th. Firm and lobulated, but not so hard as scirrhus. 8th. No recurrence after removal.

These tumours are composed of rudimentary breast tissue mixed with fibrous tissue, enclosed in strong fibrous capsules. To remove them an incision is made firmly down upon the tumour so as to open the capsule, from the interior of which the growth can be readily turned out.

G. S. PERKINS.

CARDIAC REMEDIES.

(*Continued from page* 62.)

Digitalis.—This drug is best described on the whole as a tonic to the heart, and it is a stimulant in the sense that it increases the amount of work done by the heart. It is in general use to "quiet the circulation," but we shall see that this may lead to error.

Physiological action.—Digitalis in moderate doses.

1.—Stimulates the heart muscle itself, probably through the ganglion M (see diagram), for when digitaline is applied directly to the separated heart it becomes quite hard, and white from the blood being squeezed out through the very energy of the heart's contractions.

2.—Stimulates the vasomoter centre iu the bulb, causing increased contraction of the arterioles, and a remarkably increased blood pressure which is independent of the effect on the heart itself.

3.—Stimulates some part of the intracardiac inhibitory apparatus, probably the ganglion I; the period of diastole therefore is much prolonged.

To sum up, Digitalis, in man, prolongs the period of the heart's diastole, thus giving the ventricles time to fill up with more blood than uuual, the muscular power of the heart is also increased; therefore, when the heart contracts, a greater volume of blood is sent with greater force into the arterial system; also, by acting on the arterioles, it increases the blood pressure.

Therapeutic uses.—If the preceding facts have been grasped, nothing is needed but common sense to apply them to the treatment of heart disease. It is true that most of the clinical uses of Digitalis were discovered long ago, but now we are in a position to use the drug intelligently, and also to recognise with more certainty early toxic symptoms.

If what has been said above is true, Digitalis ought to be useful where there is deficiency of heart power, and it is in simple dilatation of the heart with unimpaired valves, that this drug exerts its most wonderful power most favourably. Digitalis is not a rag to stop up a hole; it cannot tighten a leaking valve; it cannot smooth down and open a contracted orifice. But in valvular lesions it does a vast amount of good by helping the compensatory hypertrophy which is nature's attempt to prevent the ill effects of those diseases.

1.—*Mitral Stenosis.*—The diastole being lengthened by the Digitalis, the auricle is afforded more time to empty itself through the narrowed orifice, and at the same time strengthened in its contraction. Evidently then the left ventricle will have more to contract on than before, and more blood will be sent into the general circulation.

2.—*Mitral Insufficiency.*—The increased power of the systole will send proportionally more blood through the aortic orifice than through the partially closed valve. As the force and rapidity of the current increase, the larger aortic opening gains on the smaller choked mitral leak. More blood therefore passes into the general circulation, and the pulmonic is relieved, the auricle also is afforded more time to empty its contents (B. Foster); also the right ventricle shares the stimulant action of the drug, and helps the pulmonic circulation. It is evident then how useful Digitalis is in relieving the pulmonary congestion of Mitral disease.

In Bronchitis, associated with lividity and engorgement of the Lungs, Digitalis does good by assisting the right side of the heart.

3.—*Aortic Disease.*—Digitalis must be used carefully, the indication is when the heart is failing and there is dropsy. In aortic constriction where compensatory hypertrophy usually comes on rapidly, and is apt to become excessive, Digitalis does harm. In Aortic Insufficiency no rule can be made for the use of Digitalis; it all depends on the amount of dilatation and hypertrophy that has taken place. If there be evidence of failing heart, feeble pulse and dropsy, Digitalis may be used, and if there be much anæmia, its combination with iron is very useful. When there is an excessively enlarged and slowly-acting heart Digitalis does harm. It is evident then that we cannot dogmatise about the use of Digitalis in aortic disease; it depends on the individual case.

4.—*Aortic Aneurism.*—Digitalis has been used in this disease for the purpose of "quieting the circulation," but its value is doubtful for these reasons:—

a. By contracting the arterioles it increases the pressure in the arterial system in front, which pressure would react on the over-distended aorta.

b. By lengthening the diastole, the chances of regurgitation from the aorta would be favoured. At the same time if the heart power is not equal to the increased work in front, Digitalis may be used cautiously.

5.—*Cardiac Dropsy.*—Digitalis does immense good in two ways (1) by increasing heart's action (2) by increasing blood pressure in the renal artery, it causes a greater flow of urine, and so the general dropsy is relieved.

If Ludwig's "Regulator" kidney theory be correct the action of Digitalis as a diuretic is beautifully explained by its effect on the renal artery.

6.—In Adynamic Fevers, &c., where heart muscle is weak, Digitalis is useful.

Mode of Administration.—Freshly prepared infusion is the best preparation. Dr. Pavy prefers Pulv. Digitalis, because of the variability in the strength of the tincture and infusion.

Subcutaneous injection of Tr. Digitalis.—I used this method in two bad cases of Mitral disease with immediate good results. In one case I used it combined with ether, as the boy was so collapsed that he was unable to swallow. The other case was that of a man in Stephen who had a loud systolic bruit, some dropsy and an irregular heart. He suddenly had a "fit" one day, and as it was preceded by marked tumultuous action of the heart and accompanied by very intense lividity, I bled him instantly to 12 ounces, and then injected Tr. Digitalis in doses of ℥v. every ten minutes, for a few times; a couple of abortive fits succeeded, but in an hour or two his heart and pulse had become quite regular.

Cumulative action.—The use of Digitalis should be discontinued for a few days every three weeks, as it is liable to accumulate in the system and produce toxic symptoms. I have known headache and sickness produced in a few days, but here there was propably an idosyncrasy. Symptoms of poisoning are not unfrequently observed in the wards. They are—Vomiting which may become very violent, and bilious; giddiness and headache; pulse, weak and rapid, although the beat of the heart may be strong and hard, on rising from the lying posture the pulse becomes very fast, weak and irregular; pupils dilated and fixed; diarrhœa and suppression of urine are often present; salivation sometimes is abundant; the face is pale.

BACTERIA & THEIR RELATION TO DISEASE.

By J. M. HOBSON, M.B.

II.

Pathology and the pratical aims connected with it have have given the great stimulus to researches into the nature of contagion within the last ten years. On the authority of Burdon Sanderson, from whose writings we are able to draw so much information, it was Lister's Scientific work which in this country so much induced the present interest taken in the subject; while in Germany, Hallier's researches held an analogous position.

It is the specific fevers which most peremptorily call for some theory over and above one merely of physico-chemical action or "blood-poisoning." It is not the fever nor even the specific character of the disease which refuse to be explained by dead specific blood poison, but the multiplication of the poison. One person gets a contagious fever and it spreads through an unlimited number of persons. Burdon Sanderson was able to make a *poisonous extract* which would produce an attack of pyrexia and that simply. We know that certain poisons attack in preference certain organs, and there is nothing against specific animal poisons producing invariably pyrexias with each their own local lesions. That the actual phenomena of specific fevers are produced in that way is, I think, with our present knowledge, not incredible; but that one person, from a single contact with another suffering from Typhus fever, should go his way and, after a week or so of perfect health, suffer from exactly the same disease, and impart it to an indefinite number of healthy persons, is not to be explained by any such notion. I know that the conversion of *oxamide* into *oxalate of ammonia* is quoted as an illustration of the action of the supposed specific poison. Oxamide is formed by the distillation of oxalate of Ammonia, by simply a removal of two molecules of water—$(NH^4)^2\ C^2\ O^4 = (NH^2)^2\ C^2\ O^2 \times 2H\ ^2O$. When oxamide is heated with water in a closed tube, or boiled in water containing some acid or alkali, it is re-converted into oxalate of ammonia. It is stated that a small amount of acid is capable of converting an indefinite amount of oxamide into oxalate of ammonia. That is quite possible; but if the acid was diluted with five million times its bulk of water would the same result be obtained? Lister got his lactic acid fermentation with a dilution of five millions. There must be a dilution reached where a soluble substance could not be detected, and in that case the water could not be said to contain either an acid or an alkali. Yet the facts of contagion show that a dilution to zero is never reached, which would certainly be the case were the poison not reproduced in the bodies of its victims. I do not mean to say that in laboratory experiments dilution will not produce a zero in *some* portions used—this only indicating the *particulateness* of the contagium, and thus giving support to the Germ Theory—but that in the successive transmissions of desease a zero is not reached, as far as we know.

The fundamental fact in the physical characters of contagion is its particulateness. The experiments of Chauveau of Lyons, confirmed by Burdon Sanderson, prove this. The method was to take vaccine lymph, place a little at the bottom of a tiny cup, and then to add with great care a little water, so as to form a stratum above without mixing. Vaccination was then performed with the upper layer, after standing for some time so as to let diffusion between the two layers of fluid take place. Vaccination with the upper liquid was always unsuccessful and Chauveau proved the same negative fact for variolous and ovine variolous matter. Vaccine, when diluted to fifty times, began to be unsuccessful when *inoculated* but when diluted to four hundred times and *injected into the vein* of a horse a perfect result was obtained; when, however, the inoculations did take, they were as good as usual. Ovine pox would stand dilution to a hundred times without uncertainty in its action.

Burdon Sanderson says, that if contagium is particulate, the particles must be either bits of protoplasm or living organisms. In favour of the latter view is the fact of its retaining its activity in spite of exposure to influences which would be destructive to an unstable albuminous compound.

Let us now take up the several contagious diseases, which we know to be associated with the life of bacteria, one at a time.

Vaccinia, Small-pox, and Ovine-pox.—So long ago as 1863,

Lionel Beale described certain minute forms which he thought must be the active particles of the contagium.

I take the following from Burdon Sanderson's lectures in 1875 (Br. Med. Jour.).

Microsphœra Vaccinæ (Cohn), seen in fresh lymph, consists of minute speroids in couples or single. If a preparation of lymph be observed on a warm stage, the organisms are seen to divide repeatedly and form chaplets. They were recognised by this and their chemical reaction as micrococci.

About the same time another Breslau observer, Dr. Weigert, examined microscopical sections of skin in small-pox. They showed the lymphatic vessels of the cutis, plugged with a granular mass which exhibited all the characteristics of micrococcus. These lymphatic vessels were met with for the most part, beneath and around pustules in various stages of advancement. In some cases they could be found in every vertical section which comprised a pustule, though they were absent in others. These observations were made in a considerable number of cases.

To trace the relation of cause and effect in this association is the problem.

That the contagious liquid is deprived of its protency by subsidence of its non-diffusible parts, is a fact that approaches towards the settlement of the question. To isolate the contagious particles is not possible. But instead of this we may observe the parallel development of the organisms and of the Pathological processes. The fluid of ovine-pox contains organisms similar to those of small-pox and vaccine. To this purpose Klein made his investigations, published in the Rept. Medl. Off. Priv. Council, New Series No. iii. and in Phil. Trans.

In the rete malpighii there is first a general germination, then certain cells become larger and vacuolate, becoming cysts which run into each other. In the corium the tissue is swollen out by liquid occupying the interfasicular lymphatic network. From the first the liquid in the lymphatics and cyst-cavities begins to show indications of organic forms and the nature of the process becomes more and more manifest with the advance of the pock. These are not mere septic forms: for, first, the characteristic *rod* is entirely absent; second, the stage observed is not that at which septic bacteria present themselves.

Development of Vegetation.—This presents everywhere the same characters and is quite different from anything above described. A feltwork of delicate branched unjointed filaments were found first in the lymphatics, and then spreading into the epidermal cysts, bearing at their growing ends minute acrosperes and conidia after the manner of fungi of the Penicillium group. This development appeared first in the *primary pustule* and then on the tenth day the whole process was repeated in the secondary pustules. *

Splenic Fever, "*The blood*," *Malignant pustule*, or *Charbon*, is a highly contagious and malignant disease of cattle and also of men. As observed in cattle it is distinguished by an extremely rapid course and ends fatally. It is characterised by the existence in the blood of organisms which are so like *Bacillus Subtilis* that the same figures serve for the description of both. The bacterium is called *Bacillus Anthracis* and appears to have been first discovered in 1855 by Pollander.

The negative results in inoculation by Klebs and Tigel show that filtration through porous cells under pressure, by removing all solid particles, gives an innocuous fluid. Burdon Sanderson thinks that a more satisfactory proof of the particulateness of the contagium is found in the fact that blood taken from the fœtus in a pregnant animal affected with the disease is not contagious. Koch confirmed this observation.

The contagiousness of the blood is very evanescent, disappearing with the commencement of putrefaction. On the other hand the contagium seems to remain latent *out of the body* for a long period, for in a stable ten cases occurred in a period of three years, no other cases existing in the neighbourhood. "What does this mean"? says Burdon Sanderson, "Here is a disease only transmitted by inoculation and of very short duration. Why does it not perish out of existence? Clearly it would do so, had it not some means of perpetuating itself."

"Cohn, guided by the botanical characters of the rods found in the blood, classed them in that group of bacteria named by him *Bacillus*; and as he had observed that all the Bacilli produced spores, he inferred that the *Bacillas Anthracis*—for so he named the bacterium of Splenic fever—would also be found to produce spores." (Dr. Roberts, of Manchester, Br. Med. Jour. 1877, vol. ii. p. 172.)

We shall see from the researches of Koch—reviewed in the Micros. Jour. 1877, p. 86—that the inferences of both these eminent observers from their different standpoints were true.

As a convenient subject Koch uses mice, which are very susceptible to the influence of the virus, which was injected under the skin in as small a quantity as possible. As many as twenty mice were injected, each from the one before. "The result was always the same; the spleen was enormously swollen, and filled with a vast number of crystalline-looking rods of varying size, never exhibiting movements or Spore formation; they increased in number solely by division." A small portion of affected spleen may be dropped into some perfectly fresh serum, or aqueous humour of a cow. After fifteen or twenty hours *cultivation* at a temperature of 35° to 37° C. a drop may be examined; the centre will be found to exhibit shorter and longer rods (see p. 88, fig. 2). As we leave the centre, the forms are longer and some bent, till, towards the edge of the cover-glass, the fibres are more than a hundred times as long. Of these last many have lost their crystalline appearance and contain small highly refractive granules at regular distances from each other. "Quite at the edge, the fibres contain perfectly formed spores of an oval shape and highly refractive, resembling a string of pearls." Koch watched the development of the spores into Bacilli. "Placed in a drop of aqueous humour each spore was seen to take an oval shape, and to become imbedded in a circular mass which surrounded it." This enveloping material became elongated, and the spore remained at one end, though it afterwards disappeared altogether as the whole body became moulded into a rod-like form. Koch was even successful in getting a second generation of spore forming fibres. These observations have not been made once but repeatedly, and Prof. Cohn, has examined the specimens. Koch found that a temperature of 35° C. was the best for the cultivation of the Bacillus, spores appearing in twenty hours; at 18°·20° two and a half to three days were required; below 18° the appearance of spores was exceptional; below 12° the fibres did not grow. On the other hand, at 40° spores were not often formed, and did not appear at all at 45°. We see that a difference of 5° C. had the effect of reducing the most active spore production to a minimum, and this will perhaps explain why spores have not been found in the body, 100° F. being equal to nearly 38° C.

Though the fibres are short-lived, the spores will retain their potential virulence for four years, and will withstand all sorts of rough treatment, such as being reduced to dust, wetted and dried again repeatedly, kept in putrifying liquids for weeks.

To try the length of time required for the appearance of the bacterium, nine mice were inoculated at one time and examined two, four, six, eight, ten, twelve, fourteen, sixteen, and seventeen hours after respectively. The first six showed no organisms at all; in the seventh the spleen only was affected; in the eighth this organ was enlarged and the

* I have since read somewhere that Klein himself has admitted an error in thinking that he had got a branching mycelium which in reality was ther esult of, coagulation of lymph. I amafraid he is too anxious to find a higher parentage for Micrococcius.

Bacilli more numerous; and the ninth "died after seventeen hours of the disease, which was accompanied by its characteristic symptoms." Hence the disease required at least twelve hours to show signs of its presence.

Relapsing Fever.—The evidence that this specific contagious disease is dependent upon the multiplication of specific organisms within the body is as strong as that in the preceding disease. This specific organism, *Spirochæte Obermeiri*, is morphologically indistinguishable from *Spirochæte Plicatilis*, a species found in dirty water of marshes.

The following is taken from Burdon Sanderson's third report on the Pathology of the Infective Processes in the Privy Council Reports (Rep. Med. Off. Priv. C. new series No. iii.) The first observations were those of Dr. Obermeier in Belin on 82 cases of Relapsing Fever. In general the results were negative. In some, however, he noted the occurrence of organisms. This was during an epidemic in 1867-68. On the reappearance of relapsing fever in 1872 he studied cases again. Now the existence of "Spirilla," in the blood was well established and their association with the morbid process was so close that it became clear, that as soon the pyrexia subsided they disappeared too, making their appearance again when the relapse took place.

Soon after the death of Obermier from cholera, while engaged in his scientific work in 1873, his observations were confirmed by Dr. Engel of Berlin.

Subsequently Dr. M. Litten published a report made on a large number of cases in a Hospital in Breslau, and Prof. Sanderson gives an abstract of it. As regards the "Spirilla," they are found only in the blood of persons affected with Relapsing Fever, and are invariably *present* during a paroxism and *absent* in the intervals. In more than a hundred cases they were found without exception. The organisms cannot be made out immediately that the temperature begins to rise; often twenty four hours and sometimes two or three days may elapse before they can be detected. They always disappear before the critical defervescence, but not at any fixed time before; it may be just before, or it may be a day or two. The "Spirilla" do not disappear in a 'pseudo-crisis.' The number found in the blood varies considerably in individual cases.

Heydenreich, however, (Neber den Parisiten des Rückfallstyphus, Berlin, 1877) quoted by Dr. Roberts, found the "Spirilla" invariably present *before* rise of temperature. He confirmed Litten's observation of the extreme variability in the number present by finding it so in the same person, not only from day to day but even, sometimes, at different hours in the same day. The temperature at the same time remained uniformly high or with only slight variations.

Heydenreich discovered a fact which seems to explain these apparent irregularities. When some of the blood containing "Spirilla" was kept at a moderate temperature, the organisms remained alive for two or three days, but if they were kept at the temperature of the body they died in from twelve to twenty hours, if at 104° F. in from four to twelve hours. It is not improbable that the generations are very short lived and that when few or none of the organisms were found one generation had shortly perished and had not yet been succeeded by another. An observation by a man named Motschutoffsky, that the blood is equally infectious when inoculated during a paroxism, whether organisms are found or not, supports such a theory.

The disease is not inoculable during the apyrexial periods. Now this seems to be a remarkable fact, for how is it that if the germs or spores are present in the body at these times, as we must believe they are, the blood is yet innocuous? Can it be that the spores are lodged in some local nidus? We know of no process of spore formation in *Spirachæte* yet, though we must fully expect to find it soon.

(To be concluded next month.)

OUR VOLUNTEERS.

The first Saturday in June the hospital was startled from its usual quiet by a number of men armed *cap-a-pie*; anyhow, they had spikes to their head-dress. On enquiry from one whose features (though changed from their usual quiet expression to that of military ferocity) we thought we recognised, the men were found to be the G Company of the Artists' Corps. The G Company is largely made up of Guy's men, and very smart they looked in their pearl grey uniforms with black and silver facings, buff belts all well dressed, and with their appointments as clean as new pins.

It has been the custom of Major Busk to invite his Company to dinner previous to the annual inspection. This year by the kindness of the authorities the dinner was to have been held at the hospital. In addition to allowing the Company the use of a room as an armoury, and the park as a drill ground, the Governor's board room was offered as a dining hall, but as the contractors refused to cater for the Volunteers away from home, the kind offer of the hospital authorities had very reluctantly to be declined, and the dinner was held at the Terminus Hotel.

Among those present were Major Edis, the Senior Major of the regiment, Major Busk, Captain Lucas and Dr. Steele.

Major Busk, after the usual toasts, in replying to his health, said that the greatest thanks were due to the Treasurer, Governors and Dr. Steele, for the handsome manner in which they had provided for the Company. They were allowed the use of a room fitted up as an armoury, also they had given them the use of the Park as a drill ground, and what they ought to consider a great honor, the use of the grand board room of the hospital.

Dr. Steele whose health was proposed and received with cheers, said his presence there would show the the great interest the Treasurer and Governors had in anything that concerned the medical school, and in concluding his speech reminded those men in the Company who were not Guy's men, that should anything untoward occur during the afternoon, accident ward was always open.

After dinner a move was made to the hospital, and the men numbering in all seventy were drawn up in the courtyard, and marched thence to the University College, where they joined the rest of the battalion. The Colonel, Sir Frederick Leighton, P.R.A., having taken command they marched to the Horse Guards, where they were inspected for two hours, by Colonel Gipps, of Scots Guards. Rain fell heavily the whole time which made the ground very bad for manœuvreing. The inspecting officer complimented the battalion on the drill, under the especially disadvantageous circumstances. He also expressed himself highly pleased with the efficiency of the corps and the

increase in numbers, which amount to upwards of 100 since last year.

The strength of the corps is now upwards of 700. At the Company prize meeting Guy's was well to the fore, although we regret not seeing the names of the older members in the prize lists. Are they going to allow the recruits to utterly extinguish them?

The regiment goes to Sandown Park this month, for a week under canvas. This we believe is almost as good as a week's camp out up the river.

Recruits are much wanted for the Company, any gentleman wishing to join can do so by applying at the Armoury, any Wednesday from 5.30 to 6.30 p.m.

GUY'S HOSPITAL GAZETTE, *JULY*, 1879.

SOME new and most excellent regulations, connected with the Library, have just been issued by those who have the management of it; by far the most important of the new rules is that by which it is enacted that the Library shall be open from 9·30 a.m. to 5·30 p.m., instead of from 10 a.m. to 4 p.m. as heretofore. From 4 o'clock in the afternoon till dinner has always been the most difficult time to dispose of, and many men, especially if their ward work has kept them busy all day, have often wished that the Library were open a little longer. Now there is not this excuse, so if the men waste their time it is their own fault. Of course it must be more expensive to keep the Library open for eight hours instead of six, and we are sure that all the students' best thanks are due to the authorities for this indulgence. We feel certain they will find that it is not money thrown away.

Another important alteration is the new system of vouchers which each borrower of a book gives to the Librarian on receipt of the book, for which he is held responsible till he receives back his voucher. This will effectually prevent the loss of any books, or rather when they are missed it will enable the Librarian to find out who is responsible for them.

We have heard the rule which states that the Library will be closed on Bank Holidays objected to by some of the students. It must, however, be remembered that the Librarian is a human being as well as those exemplary students who never waste a single day, no, not even four Mondays in the whole year, and that he requires a holiday occasionally. Also it must be remembered that he would like his holiday the same day that his friends get theirs, in order that he might enjoy it with them. It would, we venture to think, be extremely uncharitable to compel him to be at the Library on Bank Holidays. We can quite understand that students do not care about taking a holiday on days when all London turns out to enjoy itself, but still on such, if the diligent student must read, he can do so at home.

We may here take the opportunity of reminding Guy's men that by the deposit of a guinea, which will be returned to them when they leave the Hospital, they will be allowed to take home books with them. The books not often used may be kept some days, whilst those in more frequent use must be returned the next morning.

FIRST PRIZE PAPER OF THE PHYSICAL SOCIETY.

By C. H. DOWNES.

[We must apologize for printing this paper so late, but unfortunately it has taken some time to arrange the statistics in a form fit to be printed.]

ACUTE RHEUMATISM AND SALICYLIC ACID.

Mr. Chairman and Gentlemen,

I think some apology is due to you on account of my choice of a subject, for during the last few years two papers have been read before you bearing on this disease, both by men much more able to do justice to its importance than am I. But I thought that the very ability which had characterised my predecessors' efforts, might be the means of enabling me to address you without much reiteration. For while they dealt chiefly with the pathology of the disease, I was conscious that any attempt I might make to write an epitome, which should, in a brief half hour, tell you all the Theories which had emanated from abstruse minds on this most difficult subject, would be impossible to me, and if possible, very dull to you. But while I did not, therefore, hesitate to acknowledge my incapacity to do this, I was comforted by the remembrance that after all pathology is only a means to an end, and that after finding out how it is a patient ails, it becomes necessary to treat his ailment. So I determined to leave to more accomplished men the intricate paths of pathological condensation, and con-

tent myself with a review of the various modes of treatment which are adopted. But even this limited part of the subject soon seemed too large, and then I remembered that of late years a very decided stand had been made, on behalf of the treatment by Salicin and its compounds, and it suggested itself, that if I could make out some sort of general statement, comprising the results of this treatment during its employment at Guy's Hospital, I might make a fairly instructive paper. One of the chief objects of this society is to evoke discussion, and judging by the past, one would say that no subject would be more likely to produce debating material than this question of the treatment of Acute Rheumatism; for I, in an honest endeavour to learn what my teachers thought about it, read many books, and the confusion in my mind was in direct ratio to the number of books read. Every physician appeared to have some mode of combat different from that of his fellows, and it seemed that every one supported his opinion by a sufficiently strong array of successful cases. Now, Sir Thomas Watson says, and so I shall not be presumptuous in repeating his saying, that where men differ much among themselves as to the treatment of a disease, we may be quite sure that the remedy has not yet been found. Now I have heard one of our Physicians say that in the next generation there will probably be no Heart disease because Salicin will have stopped the valve spoiling influence of Rheumatism; and another, that he believed that up to the present time there was no remedy which would produce better results to the patient than Peppermint water. In the Guy's Hopital Reports for 1865, Dr. Sutton published an abstract of 41 cases of Acute Rheumatism treated with Peppermint water by Dr. (now Sir William) Gull. Sir William Gull was of opinion that the reason why so many different modes of treatment had such uniformly good results, was that in a very great number of cases the tendency of the disease was to go on in a pretty definite course to recovery. That the natural history of the disease terminates in recovery and that the majority of cases would do well without treatment, or under any treatment, so that medicine frequently had the credit for nature's own work.

Now, what I have done is this, I have taken the cases treated with Salicin during 1876, and half those during 1877, and have made the same records, as are made by Dr. Sutton, so that it is possible to compare the results of the hundred cases tabulated by me with those by Dr. Sutton. I have taken my cases seriatim as they occur in the medical reports, without any selection whatever, and without a wish to support or oppose any mode of treatment. Of these cases 59 out of the hundred were men, 41 women; this is in accord with experience, that men from their greater exposure are more liable to attack than women. As far as I can make out this question of sex has beyond this very little value, the average duration of their illness varies but little, and so I shall not separate them but deal with the whole of the cases at once. The next point to consider is the number of days during which the patients were in the hospital, for although this question admits of some fallacies, yet taking a large number of cases one would expect that the better treatment would at least shorten the stay to some extent. It will be seen that at the present time people with Acute Rheumatism stay on a average 12 days longer than those did under Peppermint water:—

Average stay in hospital in Dr. Sutton's cases 27-8 days.

Average stay in hospital in my cases 40-85 days.

The shortest periods in hospital under Salicin were, 9, 18, 18, 17, 20 days.

While the shortest periods in hospital under Peppermint water were 7, 8, 10, 10, 11 days.

Now, it may be said that, all patients, owing to the greater capacity of the Hospital, stay a relatively longer time than in 1865. And I think it is probable that this may be the case, but at least there is no evidence on this point to favour the assumption that Salicin cuts short the total duration of illness and convalescence. Again, Dr. Peacock published in the St. Thomas' reports for 1872 an abstract of some (87) cases, when he made the average number of days spent in hospital to be 42, thus bringing them very nearly on a equal footing with our cases under Salicin. So far, then, it seems to me evident that, whatever the effect of Salicin may be on temperature or on pain, or any other symptom of the disease, there is in these cases nothing to show that it has any influence in shortening the whole period of illness. And this seems of some importance, although not of such, as the question of its action on the heart. Another point that has some bearing on the duration of illness in these cases, is the number of attacks which each patient has had; for instance, one would expect that, other things being equal, the more attacks he had had the more the disease would have approached a chronic form, in which the man would linger on for some time. For these reasons I tabulated the number of times each case had had Rheumatism previous to his admission. Comparing these with Dr. Sutton's, we find that 52 per cent. of our cases are first attacks, only 42 per cent. of Dr. Sutton's, so that if any advantage is to be gained we have it. Again, 25 per cent. of ours are 2nd attacks, 13 per cent Dr. Sutton's, 3 per cent of ours 3rd. 12 per cent Dr. Sutton's. So that in all we have the better ground for working on, having a larger proportion of first cases and a smaller proportion of old standing chronic ones. For the present I shall leave the consideration of this point and pass on to another shewn in Dr. Gull's cases. There is a date given on which the patient "was free from pain, with skin cool, and after which

there was no relapse," and the average number of days that elapsed between admission and this date was 14·2 days. Now, in our cases, the average number of days to date of freedom from pain was 9 5 days; thus giving the Salicin cases a clear gain on this point over the others. But it should be noted that while Dr. Sutton's report states decidedly that there was no relapse after the registration of his "date of freedom from pain," in my cases there occurred seventeen relapses of greater or less severity. So that my records have that advantage over the others, that the number of days during which the relapse lasted is counted in Dr. Sutton's cases and not in mine. But even allowing for this source of error, I suppose there can be no doubt that Salicin does in some cases tend to allay the pain. Out of the hundred cases, 5 were relieved of all pain on the second day, and of these only one had a relapse and that a slight one occurring on the 25th day after being out in the Park, so that possibly it might be thought a fresh attack rather than a relapse. Of these five, four presented well marked symptoms, with severe pain, and in all the five the pain left in two days. In two there were heart complications, in two none. In two there was a a congenital history of Rheumatism, in two there was none. In one case the temperature was not recorded, in one it fell to normal with the subsidence of the pain, in two the fall in temperature was not coincident with the freedom from pain, for it did not reach a normal point until 5 and 6 days after. I have gone somewhat tediously perhaps into the details of these five cases, because, the fact of their pain going on the second day of treatment is rather surprising, but we have to recollect that after all it is only five cases out of a hundred in which Salicin was given, and I would ask is it not on somewhat weak ground that we build our theory? In 10 cases the pain had entirely gone in 3 days after admission; of these 6 had heart disease, four had not; but even in these 10 cases, half the number had relapses varying from four to fifteen days in duration. In four cases the pain left in four days, of these one had a relapse whilst three went on uninterruptedly to recovery. Leaving the consideration of these points until afterward, I pass on to give a summary of the results of my tables, on the question of heart complication. The heart was affected in 80 out of the 100 cases. In nine the cardiac symptoms were developed during residence in hospital. The remaining 71 had abnormal heart sounds on admission. Of the 71, there is no more to be said, they, of course, could not be counted as witnesses against Salicin. But let us go a little more carefully into detail concerning the 9 in whom cardiac mischief occurred while under treatment. In one the heart sounds were said to be "not quite clear" on admission, so that probably the mischief had begun prior to his coming in. In one the condition of heart on admission was not noted. And in one where Pericarditis supervened, there was decided pain over the Sternum when he came in, although no Pericarditis could be detected, it is therefore possible that here also the organ was not sound when he began the salicin.

Making these deductions, there remain six cases in which as far as can possibly be told, the heart became affected while Salicin was being exhibited. It may be of interest if I summarise the way in which the heart was diseased, although I am not aware that it has any special bearing on the question of Salicin treatment. Of the 80, this was the variety of the complications:—

12 cases of Pericarditis, (one developed during residence in hospital).
41 cases Systolic Mitral Bruit.
2 „ Roughened 1st sound, (Audible at Apex). One was first detected 6 days after admission.
5 „ Systolic Bruit position not recorded.
1 „ Diastolic Bruit position not recorded.
12 „ Aortic Systolic Bruit.

One in which there was "a reduplicated second sound."

The Mitral Systolic Bruits in many cases were transcient, disappearing during the convalescence in 7 out of the 41 patients in whom it was present, but "per contra" it appeared during residence in 4. Comparing these statistics again with Dr. Sutton's, I find that of his 41 cases, 28 suffered from heart complications (that is about 70 per cent.), 17 had Systolic Apex Bruits (about 42 per cent.), 6 had Pericarditis (about 14 per cent.). So that if we imagine Dr. Sutton's cases carried on to a 100, we should have almost exactly similar statistics to these of mine. I merely say this to show that taken as a whole, the cases, as one would expect in so considerable a number, have a tendency to obey the recognised laws of averages. Now at this point a very important question arises; at what period of an attack is heart disease most likely to occur? If at the commencement, then the longer the general disease has existed without cardiac complication the more probable it becomes that it will terminate without that additional source of danger. In the uncomplicated cases the average time during which the disease had been present prior to admission was 12 days, the extremes 28 and 3 days. Four cases were admitted on the fifth day of the fever and no heart symptoms were subsequently developed, so that in these at least one may say that the immunity might probably be due to the Salicin treatment. But if you refer back to Dr. Sutton's paper you will find that 3 of his patients who were admitted on the 2nd and 3rd days of the fever, went on uninterruptedly to recovery, thus giving one the right to hold that if heart disease does not show itself on admission, probabilities are greatly in favour of its keeping away altogether. And in this matter we are dealing, chiefly with probabilities, for it is at least undecided

at what period the heart is most prone to take on inflammatory action. It is clearly unfair to admit as witnesses against the heart protecting influence of this or any other drug, cases in which there was any evidence of imperfection of the organ before the treatment commenced. And it appears to me equally misleading to attribute the immunity which the twenty cases enjoyed to that influence; and for these reasons:—First, that it is clearly shewn that many cases and these amongst the most severe as regards joint affection, pain, and temperature, have at all times progressed to a favourable termination without heart disease, under all kinds of treatment, and markedly under that by Peppermint water. Secondly, that in by far the majority of cases wherein heart disease has been developed, it has been diagnosed on admission, that is in the early days of the complaint, so that if a man goes on for a week without heart disease, the probability is that he will remain without it. Thirdly, that in seven out of the one hundred cases heart disease manifested itself during the exhibition of the drug, and this in patients who had no no sign of it on admission.

One more point that I shall endeavour to discuss, is that of Temperature, and in this Salicin has been said to have a most marked effect. You may perchance quarrel with me for calling this a symptom, and say that the most severe forms of the disease are rather due to this exacerbation of bodily heat. Call it cause or result, I care little; but if it be cause, then I say that you have in the cold bath a much more rapid and certain method of reducing it than by any drug, and the argument that this is inconvenient and disagreeable only holds so long as you regard it as a symptom, for if it be true that keeping down the temperature means freedom from that most terrible result of Rheumatism, I believe I shall receive the support of every one of you when I say that nothing should justify us in throwing away such a certain means of doing it, in order to grasp such an uncertain one.

(To be concluded in our next.)

TETANUS NEONATORIUM.

A case of this comparatively rare disease having lately come under my notice, I thought it would interest the readers of the Gazette to place it before them with a brief resumé of what is known of this particular affection.

The following are short and somewhat imperfect notes. M. W. was born May 20th, at 2 p.m. I was called to see it the same evening, and found a hernia of the intestines along the side of the umbilical cord about the size of a small closed fist; this was returned and the cord tied close to the umbilicus. All went well till the afternoon of the 26th, the mother noticed that the child could not suck well, and that it did not seem able to open its mouth wide enough to receive the teat, and that later on it had slight convulsive attacks. When seen at 9.30 p.m. the child was lying quietly, breathing rapidly, with its arms drawn up and fists clenched and a marked "*risus sardonicus*." If the child were touched the hands would become more firmly clenched and at the same time a rythmical tremor; the face was drawn, jaw fixed, not even allowing the tip of the little finger to be inserted between the gums and the child would cry as if in pain. During the spasm it was unable to take milk. Abdominal muscles rigid. The umbilicus was red and the discharge offensive. Ordered brandy and milk.

May 27—The child had many spasmodic attacks during the night, it being scarcely possible to feed it with a spoon. In much the same condition as in the previous evening, only weaker, the muscles of the throat during a spasm became very rigid, and the face became blue. Ordered Ememata of brandy and milk.

In the afternoon the child became much more exhausted; the head was now markedly retracted, the spasms more frequent and the jaw more firmly closed.

May 28—Became more exhausted and died during the day.

Curling in a "Treatise on Tetanus" states that Tetanus Neonatorium very rarely occurs except in tropical climates, and is more common in lying in Institutions than ordinary obstetric practice. Nearly all authorities agree in placing this in the class of cases of Tetanus from tramnatic causes, the wound or injury being the tying of the umbilical cord. It is certainly frequently associated with an unhealthy suppuration about the umbilicus. Some Germans trace a connection between Tetanus Neonatorium and the use of the hot baths.

It rarely delays its appearance beyond the ninth day from the child's birth, though cases are in record where it has appeared as late as the fourteenth day.

Its pathology is not different from that of Tetanus in adult life; though in children more frequently than in adults, there is seen a transudation into the vertebral canal and distension of the blood vessels of the membranes and extravasations into the brain and cord.

Dr. Schoeller noticed an inflammation of the umbibical arteries and phlebitis with a local peritonitis around the umbilicus.

Before the serious nature of the case is diagnosed, the mother will complain that the child does not take the breast well, that it cries and though apparently hungry, yet does not seem able to grasp the nipple.

Tetanus is the symptom first noticed and in some cases the only one. The *risus sardonicus* being observable even in such small children.

Trismus Nasentium is a recognised disorder, the jaw may not be quite closed but yet cannot be sufficiently opened to allow of the child taking nourishment.

The tonic spasms spread downwards, involving the upper and lower extremities, first the muscles of the chest and back. Thus in opisthotonos, the head is drawn back and during the spasms excessive dyspnœa. The spasms are very violent while they last, but there is frequently a time of complete remission. A collapsed state soon ensues and death generally takes place in twenty four to forty eight hours.

The *prognosis* is very unfavourable, recovery being rare; in fact, so fatal is the disease amongst newly born children that occasional cases of recovery have been looked upon as probable errors in diagnosis. Should the child live beyond three days the prognosis becomes more hopeful. Such statements as these show that *treatment* up to the present time has been almost nugatory.

The numerous remedies recommended and tried for adult Tetanus have been applied, though without much success in Neonatorium. Bauer, in Ziemssen's Cyclopedia of Medicine, states that those cases that have recovered did so under opium.

Niemeger advocates Chamomile baths with Clysters containing a drop of Opium.

In the *Lancet* for March 18, 1871, there are notes of a case (the only case recorded in the *Lancet* for the last seventeen years,) treated by Dr. Widerhofer, of Vienna. He used chloral, two to four grain doses given by the bowel, if the child was not able to take it by the mouth. In this case, however, the child was able to take the mother's breast in the intervals of the spasms.

In the present case no treatment was adopted beyond brandy and milk by the mouth and bowel, and a place bo, the mother being at once informed of the almost necessarily fatal termination of the case.

Hitherto any reliable drug has not been found; there are published cases of cures under Chloral, Curaræ, Chloroform and what not, but they are few compared to the number of unsuccessful cases *not* published. The treatment adopted is in most cases irrational and unscientific. A patient has a hyper-excited action of the cord ending in spasms and convulsions; to give him a powerful spinal paralysing agent, seems like knocking a patient with delirium tremens on the head to keep him quiet.

There is no cure in overcoming one poison with another more powerful. The morbific action of the lesser poison is quietly going in, whilst its more powerful ally is demonstrating its action on the organism.

We must look yet further afield for a "Specific;" the ground of spinal remedies has not yet been thoroughly exhausted.

C. KNOX SHAW.

FRIENDSHIP.

Friendship, when real, is one of the green spots in the feelings and memories of men. It is of supreme origin. It is one soul absorbed in the sympathies and motives of the other. It is mutual confidence and desire blended freely together. It is a spontaneous covenant; stronger than words, deeper than formal agreement, and purer and happier than conventional law. It is the compact beauty of two souls in one, and the reciprocal appreciation of the highest nature, born of the same spirit womb. A beautiful esoteric union, from which emanate unselfish sympathies, and a fellowship with all the world. For the more perfectly happy a man's esoteric life is, the more will radiant kindliness extend over his exoteric life. Lord Bacon says it is "peace in the affections and support in the judgment," and that it is like the pomegranate, full of many kernels, in aiding and bearing a part in all actions and occasions, and that a friend is far more than himself, for a man "hath as it were, two lives in his desires," and after his death his wishes will be carried out and his teaching and influence will still live in the life of his friend, who is more than a brother. "But half my life I leave behind," Tennyson writes in the world renowned "In Memoriam," in his Canto on the funeral of his friend. He felt though dead he yet lived—

> "Since we deserve the name of friends,
> And thine effect so lives in me,
> A part of mine may live in thee
> And move thee on to noble ends."

And in that belief, which pervades the whole book, of an eternal life hereafter, he says, "And there I find him worthier to be loved." But the whole poem is one exquisite out pouring of a perfect friendship, and may be accepted as the most complete analysis extant. Truly he has realized "*L'amitie est l'amour sans ailes*," for his feelings have all the warmth, all the passion and trust of love, without the wings wherewith to fly away.

Robert Blair writing in the the seventeenth century speaks of friendship as the "mysterious cement of the soul," a bond of union as it were, and a joining so compactly that it would seem almost impossible to separate. Coleridge calls it "a sheltering tree," as if it were something which guarded and protected; and so friendship does, for how safe is a man's honor and opinions in the keeping of his friend.

True friendship is very rare, and we should account the man fortunate who gains one friend or forms one perfect friendship during his whole life.

How often does the affection of relations, especially conjugal ones, fall short of the ideal happiness in consequence of the absence of friendship. *Too* seldom can the wife sympathise with her husband's highest thoughts, being as a rule his inferior, and totally incapable of appreciating his higher nature, and his aims

and objects in life; so he has a life as far apart from hers as if a thousand miles divided them; he loves her, but has no friendship with her, so seeks a friend elsewhere; he enters the world with a vague yearning in his brain, and a dead weight at his heart, and care seated on his shoulder, and perchance, at last, finds solace in hard ever impelling work, or in various recreations or dissipations, and so, they, both, fall short of a perfect happiness. Again when a woman marries a man her inferior, the ideal bliss, the panting friendship of which she is capable becomes blasted, and she realizes herself chained, with a life long chain, to a corpse. The skeleton leads her forth as a happy wife, she smiles, she affects a quiet happiness, (a hypocrisy women are prone to) but the chains of a living death drag and fetter her whole being. Her nerve sensibilities are highly strung as she realizes, without knowing why, the golden drops of friendship, liquid with their earnest warmth, fall on an impenetrable marble, and become either tarnished by the rude breath of the atmosphere, or else return without fruition to the casket where they dwelt.

Oliver Wendell Holmes says, "I have seen faces of women that were fair to look upon, yet one could see that the icicles were forming round these women's hearts." Yes, for women feel, or appear to feel, these things more than we men; their life is more sedentary, they have not the same occupations and counter irritants in work, for as Lord Byron says, with some degree of truth, "Love is of man's life, a thing apart; 'tis woman's whole existence."

"The real is divine, the artificial is a deformed humanity." So truly it is, as the one is the mirrored reflection of two lights lightening each other, while the second is a distorted "Will-o-the-wisp," leading astray confidence over the wild marsh of uncertain affections.

Some writers it would seem, have rather confounded the commodity of friendship with sympathising love, and would lead us to anticipate a friendship with Christ (as a Divine Being).

Truly this is a very beautiful sentiment, but it is, not friendship simply, because Christ receives no benefit. It would be sympathising love, infinite in power, and human in its attributes, but not friendship; for the basis of friendship is the interchanging of ideas and the mysterious strength derived from it, and by the same argument we must contend that to recognise hypocrisy and friendship as cognate is impossible, for when the souls have become one by mutual consent—by correlation of thought—each sympathising with the highest nature of the other, friendship must be as far from anything approaching to hypocrisy as sin is from the purity of virtue.

UNITED HOSPITALS SPORTS.

Starter—W. Richardson Crosse. *Judges*—E. C. Cripps and F. Parish. *Referee*—E. B. Turner. *Handicapper*—J. H. A. Reay. *Official Timekeeper*—T. Griffith. *Hon. Treasurer*—F. Shapley. *Hon. Sec.*—A. A. Bowlby.

THE stormy weather of Wednesday, July 2nd, had a noticeable effect on the attendance at the thirteenth annual celebration of these games at Stamford Bridge; but nevertheless, the grand stand and the marquee recently pitched on the elevated ground to the right of the stand were well patronised, and a fair number of spectators assembled round the rails.

In the different events Guy's, as usual, showed to advantage, scoring a trio of wins; but in the end had to yield up the challenge shield to St. Thomas's, who, by the aid of H. M. Massey and J. Orford, managed to land four, and thereby constitute St. Thomas's as the champion hospital. The racing, as is invariably the case in "championship" meetings, was not particularly close; but the running throughout was fairly good, and we are glad to record that the committee very wisely refrain from letting what is now considered walking appear on their programme, such races being generally provocative of nothing save uncomfortableness, and the metropolitan form in the line just now being of the very worst description. During the afternoon the excellent band of the Coldstream Guards played a capital selection under the able leadership of Mr. Godfrey, and did their best to make the meeting pass off well. Appended is a return:

100 *Yards Race, Challenge Cup.—First Heat*: F. H. Voss, London, 1; J. Holroyde, London, 2; A. A. Bowlby, St. Barts. 3; T. G. A. Shepperd, Guy's, 0. A well-contested race, Voss only getting up at the finish, and winning only by three-quarters of a yard; a foot only between second and third. Time, 10⅘ sec.—*Second Heat*: H. M. Massey, St. Thomas's, 1; L. Stokes, Guy's, 2; T. A. Guinness, King's, 0. Won rather easily by a yard and a half. Time, 10⅗ sec.—*Final Heat*: Massey, 1; Stokes, 2; Voss, 0; Holroyde, 0. Massey again had it all his own way, but ran out, and won by fully two yards and a half in 10⅗ sec. The runners had a strong rear wind.

Throwing the Hammer.—J. Orford, St. Thomas's, 85ft 2in, 1; J. A. Fraser, Guy's 75ft 3in, 2; M. Smith, St. Bartholomew's, 0.

120 *Yards Hurdle Race, 10 flights, 3ft 6in high—First Heat*: J. E. Lane, St. Mary's, 1; E. Linnell, Guy's, 2. Won anyhow. Time, 23sec.—*Second Heat*: W. R. Pollock, St. George's, 1; T. J. A. Shepherd, Guy's 2; E. F. White, St. Thomas's, 3. Won with consumate ease by half a dozen yards. Time, 18⅘ sec.—*Final Heat*: Pollock, 1; Lane, 2; Linnell, 0; Shepherd, 0. Pollock again led throughout, and won in a grand style by a long distance by six yards. Time, 16⅘ sec. In this race, as in the 100 yards race, the runners were favoured with a strong rear wind.

One Mile Challenge Cup.—W. Collier, King's 1; H. C. Howard, St. George's, 2, W. C. Wilkinson, University, 3; P. M. Earle, Guy's, 0; J. F. Spong, Guy's, 0; W. H. Cuthbert, Westminster, 0. Collier led all the way, followed by Howard and Wilkinson, and they finished in that order at intervals of thirty yards and forty-five yards respectively. Time—quarter mile, 1min 6sec; half mile, 2min 19sec; three-quarter mile, 3min 34sec; mile, 4min 45sec.

Putting the Weight. 16lb.—J. Orford, St. Thomas's 37ft, 1; J. A. Fraser, Guy's 35ft, 10in, 2; P. Boobyer, King's 0; G. H. Coates, University, 0; B. M. Moorhouse, Guy's 0; M. Smith, St. Bartholomew's 0.

Quarter Mile Race Challenge Cup.—(Presented by J. V. Montefiore, Esq.,) L. Stokes, Guy's 1; J. B. Griffiths, Guy's, 2;

T. A. Guiness, King's 0. Guiness and Stokes made a good race of it until the last straight, when the former fell, and Stokes, going on, won easily by fifteen yards from Griffiths. Time, 53⅘ sec.

High Jump.—T. J. A. Shepherd, Guy's, 5ft 6in, 1; M. S. Wilson, King's, 5ft 5in, 2; E. Sinnell, Guy's, 0; G. H. Coates, University, 0.

Half Mile Challenge Cup.—(Presented by Dr. J. G. Beany) H. W. Gate, St. Mary's 1; F. W. Humphrey, St. George's, 2; W. C. Wilkinson, University, 3. Won, after a good race, by three yards; a yard between second and third. Time, 2min 10⅘sec.

Long Jump.—H. M. Massey, St. Thomas's, 20ft 10in, 1; M. S. Wilson, King's, 19ft, 2; J. T. A. Shepherd, Guy's, 0.

220 *Yards Race—Final Heat (trials run off at a previous date)*: L. Stokes, Guy's, 1; H. M. Massey, St. Thomas's, 2; R. D. Gwilliam, St. Msry's, 3; T. A. Guiness, King's 0. A capital race won by a yard. Time, 22⅘sec.

Three Miles Race—H. C. Howard, St George's, 1; H. W. Crosse, St. Mary's, 2; J. L. Kitching, St. Thomas's, 3. Howard made all the running after the first half mile, and won easily by one hundred yards; half that distance between second and third. Time, 16min 44⅘sec.

One Mile Handicap, Open.—J. J. Archer, Spartans, 85yds, 1; R. S. Benson, Royal School of Mines, 50yds, 2; E. W. Parker, Spartans, 85yds, 3; S. K. Holman, Belsize, F.C., 58yds, 0; C. H. Mason, L.A.C., 58pds, 0; F. Chattaway, Richmond F.C., 60yds, 0; B. Smith, L.A.C., 78yds, 0; A. H. Davies, Blackheath, Harriers, 78yds, 0; J. A. Voelcker, L.A.C., 78yds, 0; H. E. Tomkins, L.A.C., 80yds, 0; W. Stevenson, L.A.C., 90yds, 0; G. Hope, Clapton Beagles, 90yds, 0; S. J. Tailby, Spartans, 92yds, 0; A. H. Stoneham, Beckenham C.C., 100yds, 0; W. Marsh, Chiselhurst C.C., 100yds, 0; J. Foreman, Elvaston C.C., 100yds, 0; T. H. Woodford, Hampstead Harriers, 100yds, 0. Archer took the lead one hundred and fifty yards from home, end won easily by a dozen yards; half that distance between second and third. Time, 4min 26⅘sec.

300 *Yards Consolation Race.*—R. D. Gwilliam, St. Mary's 1.

Correspondence.

The Editor wishes it to be distinctly understood that he is not in any way responsible for opinions expressed by Correspondents.

TO THE EDITOR, OF THE, *Guy's Hospital Gazette.*"

SIR,—I am sure that the majority of your readers have read Dr. Wilks' Harveian oration with great pleasure, and I think that the gratitude which is due to everyone who brings ideas to light should flow towards Dr. Wilks in full stream, and no doubt there are at this moment, if one could see them, innumerable little springs of it bubbling up all over the British Isles.

To us Guy's men, who know Dr. Wilks so well, the idea of a science accessible only to medical men is no new one; at any rate, speaking for myself, it seems that as long as my thought has run in medical grooves this truth has been always before me.

Now I am going to be so bold as to propose a name for this science, for at present we have none for it. We are in the habit of saying of certain phenomena of nutrition, and of certain functions in the living subject too, perhaps, that they are pathological as opposed to physiological. So the name *Physiology* having already a special meaning can hardly be applied here. *Morbid Anatomy* of course will not suffice. I propose to extend the name *Pathology* so as to be sufficient. The etymology of the word warrants this—the *logos of suffering.* Have we exhausted our discourse when we have described the anatomical changes and the steps in their production?

Take a case of pneumonia: we can describe the naked eye appearances of the solid lung, describe the packing of the air cells with lymph and leucocytes, and then proceed to talk of diapedesis and all we know, and would like to know about inflammation. But how did the patient get pneumonia, and why was it not bronchitis or simply pleurisy? Why did it affect one lung more than the other, and begin at the base and go up to the apex? Why did the patient die while that other one lived? Why did he have that eruption of herpes about his lips?

Thus we see that we cannot help taking a wider range than is compassed by merely anatomical changes, and while considering the thing that this man was suffering from, we have deep questions asked of us about the more subtle relationships of his tissues and the reaction of his whole organism to the abnormal processes going on. Take again those questions of vast interest attaching to the phenomena of new growth. An Icthyosis of the tongue becoming in course of time a epithelioma—a race of epithelial cells embarking on a process of evolution, in response to some change of environment, till they build up a cancer. Then, tacked on to this, the curious notion of one cell infecting another.

All the enquiries into the nature of Fever must come under the heading *Pathology*, and all, or nearly all, the data must be derived from observation of the living subject.

We are now looking to physical experiment for an explanation of cardiac and vascular bruits; and these enquiries into the working of abnormal processes in the living subject are entitled to be called *pathological.* So are sphygmogrephies, cardiographies, and all other methods used for finding out anatomical conditions or physiological action.

There is a scientific use to be made of the phenomena of the living disease, quite out of relation with the pathological lesion which was the cause of their manifestation. This we see in the nervous diseases, where the lesion is often of the vascular system, while the symptoms which interest us lie wholly in the nervous. A man gets a hæmorrhage from disease of his cerebral vessels involving some convolutions in one of his frontal lobes, and afterwards loses all but the simplest forms of speech. Hughlings Jackson studies such cases as instances of *dissolution;* the patient has lost his latest acquired or evolved nervous arrangements for speech, but retains his earliest acquired, automatic, or most organised arrangements; he has lost words, but retains the understanding of words; retains images of things, but has lost the symbols of those images.

In Epilipsy again, of whose morbid anatomy we know nothing, Hughlings Jackson finds revelations of mental construction: the highest centres are in abeyance, after having been discharged, and the lower centres come into prominence. In Hysteria, Dr. Wilks sees one half of the brain suspending its function, and, generally, a revelation of qualities in the nervous system of which we had otherwise never dreamt as existing.

There are a great number of clinical data which at present are of little interest except towards treatment, such as the signs of a broken leg, or the symptoms of an ague fit. But data by themselves can never constitute a science, just as a collection of butterflies does not constitute the owner a scientific man. A Botanist who knew every British plant would not on that account be a scientific man; but when that knowledge furnished him with data for morphological researches, or even gave him the means of finding plants for experimental purposes, and of communicating to others his results, then such empirical knowledge would take its place as part of a system of Botanical Science. Hughlings Jackson is always insisting on the distinction between an empirical and a scientific classification, and an empirical and a scientific study of disease.

GUY'S HOSPITAL GAZETTE,
AUGUST, 1879.

ORIGINAL RESEARCH.

A few years ago the newspapers were full of letters and discussions on the decay of scientific research in England, the absence of encouragement of advanced studies, and the necessity for the Government doing something (that is to say paying something) to induce learned persons to make discoveries. A public meeting was held, and next morning the *Times* contained a full report of the eloquent speeches made by the very distinguished company—chiefly holders of Sinecure professorships and "idle fellowships," who pointed out the importance of the several studies which circumstances did not allow them to prosecute, the absurdity of expecting men to seek for truth amid the Groves of an Academy at less than five-hundred a year, and the hardship of a superior person engaged in the contemplation of abstract truth being distracted by the duties of a teacher.

Awaiting the time when an enlightened Government will endow research, we may remember with comfort that a great deal of original work of the highest order is accomplished without endowment by men who work for the love of it.

The philosopher to whom above all others is due the vastly important doctrine of the Conservation of Energy was a country surgeon of Heilbronn, in Würtemburg, and the only researches in the difficult study of Embryology which can becompared with the writings of Von Baer and Rathké for originality, insight and extent, were carried on in the intervals of general practice by a licentiate of the Society of Apothecaries.

It is not given to everyone to emulate the labours of Mayer or of Parker; but every member of our profession should hope not only to learn more and to succeed better as he goes on, but to add some contribution to our knowledge. No other profession offers such fair opportunities for original and valuable observations. For facts bearing on the hereditary transmission of disease, on what are called constitutions or temperaments and diatheses, on the course of infections on the pathology of tropical and other endemic diseases, the republic of medicine must look almost exclusively to the observations of general practitioners. Many such valuable facts have been recorded by men who have learned how to observe in Guy's Wards, and many no doubt will be made in future years by those who are now students. But there is no reason why senior men should not begin original observation at once.

A few months ago a paper in the *Gazette* complained that students are not more frequently allowed to take part in pathological inquiries. Experience would show that nowhere are they so freely admitted to all the opportunities of mature study, and nowhere is their help more gladly welcomed. As a matter of fact it is only necessary to glance through the volumes of the Guy's Reports to see how much admirable work has been done by students, and how liberally it has been acknowledged. The following are only a very few of almost numberless instances of the kind. In the first volume of our Reports, in 1836, was published an essay on diseases of the joints read before the old Physical Society, by a student, Mr. Blackburn, (unhappily drowned at sea not long after) in which the operation of incision of joints was first put upon a sound basis. The same volume contains an analysis of Urine containing Cystine in large amount, and of one of the rare Cystine Calculi in our Museum by the late Dr. Golding Bird then a student of Guy's Hospital. Mr. Birkett's papers on the results of operations for hernia, Dr. Fagge's on intestinal obstruction and on mitral stenosis, and numerous others in our Reports and elsewhere on amputations, chorea, aneurism, puerperal diseases, and other important subjects were all founded on observations made by senior students, whose services are fully stated. Similar acknowledgments will be found in the printed Catalogues of our Museum.

The papers read before the Physical Society and the essays sent in competition for its prizes have often been good examples of independent research and there is scarcely a case in the wards, or in the deadhouse, but may be made the occasion for putting new facts on record revealed by the sphygmograph, the thermometer, or the microscope.

Men cannot be expected to do much in original research until they have passed their examinations, but between that and getting into harness there is a golden time, a few months perhaps, or a year or with some fortunate people, still now, when there is the best possible opportunity for following up whatever investigation may be most interesting or most obvious.

In Germany, the promised land of the educational reformer, where professors wear orders and live in palaces, where the maintenance of laboratories is an important article in budgets, and where original research goes on everywhere and all the year round—each professor has a number of senior students and assistants, who take up this or the other line of inquiry by his advice, and under his guidance. Essays recording the observations and experiments of beginners in the field of discovery, with plenty of time and enthusiasm, guided by the experience and critical judgment of the veteran, are familiar to students of German scientific literature. They are among the most valuable researches which are published, and reflect equal honour on the teacher and the student.

Such investigations are open to every Guy's man. Now, between the summer and winter sessions, is a most favourable opportunity for them. As a glance through the pages of the Guy's Reports and the Guy's

Gazette, will show, much has been already accomplished in the way indicated, but the harvest is abundant and there is ample room for more reapers.

Even in anatomy, thoroughly as it has been worked, there are still points awaiting investigation. There is a collection of skulls in our Museum which has never yet been accurately measured and described. Abnormalities in the dissecting room are constantly occurring and only need care and industry in collecting. The action of muscles and of joints need fresh methods of inquiry by those who are versed in Mechanics. Sections of embryos at early stages are still needed to determine some of the more obscure questions in development, and this fascinating branch of inquiry is open to anyone who keeps hens, and knows how to imbed and cut sections. Those who take special interest in comparative anatomy in animal chemistry, in histology, or in physiology would find that the teachers of these subjects would be only too pleased to provide them with promising objects of research. In the deadhouse there is a rich store of material every day of which only a small part can be used. The same is true of the various special departments of out-patient practice, ophthalmic, obstetric, aural, dental, cutaneous, in all of them there is room for steady and intelligent work.

But the wards after all are the proper field of original research in medicine, and there we all alike find endless subjects of interest, interest which is not only scientific but is warmed by human sympathy. In the surgical, clinical, and obstetric wards in Barnabas and in Samaritan, there is not a day when the physicians and surgeons could not point to some case or group of cases which only need careful investigation to yield results of great, possibly of the highest value. The material is there, help in using it is to be had for the asking, what is wanted is the ability and the willingness to work.

In conclusion, two cautions may be recommended to those who may feel eager to begin original research.

First, work of the kind must be steady and continuous to be of any value. Desultory observations are almost useless, and false facts are more mischievous than false theories.

Secondly, one must not work with the expectation of "making discoveries." They will come in time and bring their credit with them. But he who enters for this race must keep his eyes upon the goal, and not stoop like Atalanta to pick the golden apples in his path. He must find in patient, honest labour, his full reward, and feel that while good fame—*laudari a laudatis*—is worth ambition.

"One self-approving hour whole years outweighs,
Of stupid starers and of loud hussas."

THE NATURE OF LORD BACON'S INFLUENCE ON THE SCIENTIFIC MOVEMENT OF THE 17TH CENTURY.

There are two points of view from which the Novum Organon may be regarded. We may either consider its influence upon the scientific discoverers, or we may inquire what effect it produced upon the great mass of thoughtful and intelligent men who studied it with attention, but were not themselves occupied with scientific researches.

From the first point of view, Lord Bacon's work has been severely criticized by the late Dr. Justus Liebig, and by Professor Draper, and more recently by Professor Huxley, in a lecture upon Harvey. It was natural to adopt this point of view; because, Bacon, in writing his Organon, intended to provide a series of "rules and demonstrations" which should infalliby lead to discoveries, and he himself supposed that his method would aid the mind in its work as machinery aids the hand. It is not surprising, therefore, that men should seek for traces of his influence in the great series of scientific discoveries which have succeeded the publication of the book. But in this direction our expectations are disappointed, and if we desire to appreciate the greatness of his work, we must turn not to the discoverers, but to the people at large. We shall find him great, not for teaching investigators the art of discovery, but for strengthening and spreading abroad those habits of mind which were familiar enough to such men as Galileo and Harvey, but were as yet strange to most of their contemporaries.

Several considerations support this opinion, that Bacon's influence was really popular and not in any degree scientific.

As a matter of universal experience, men do not discover by rule—Kepler and Copernicus and Galileo were not led by any systematic method. The discovers of modern times owe nothing to the systematic expositions of scientific processes of Sir J. Herchel, Whewitt and Mill, and we cannot doubt that the discoverers of Bacon's day were equally independent of rules. This is shown by the writings of Bacon's first followers, for the early members of the Royal Society, even when like Hooke and Boyle, they aim at the closest following of Bacon's rules, cannot be shown to owe any discovery or new train of reasoning to them.

Moreover, although the Novum Organon was received by most of the scientific men of the day with sympathy and admiration, it met with its widest and most enthusiastic reception among the students and younger teachers at the Universities. The men actually engaged upon the study of nature required no teacher to urge them to call no man master. No man ever asserted his independence of Aristotle more clearly than Galileo, and there was nothing new to them in the advice to observe and experiment. Friar

Bacon, in the 13th century, declared, "Nihil sufficienter scire potest nisi per experientiam," and no man before or since has ever surpassed Harvey in observation or experiment. But at the Universities the authority of the "great master" Aristotle was almost supreme, and an opinion was only valuable in proportion as it could be backed by his authority. The subjects, too, upon which most learning was spent were not more hopeful. If men were learned they sat apart like the spirits in Pandemonium, and

"Reasoned high
Of providence, foreknowledge, will and fate:
Fixed fate, freewill, foreknowledge absolute,"

Regarding any less elevated topics as unworthy of a wise man's contemplation.

But there was a large and increasing party in both Oxford and Cambridge who were ready for the coming change, and among these men the Novum Organon exercised an influence which can scarcely be exaggerated. It gave increased clearness to their aims and definiteness to their position. Henceforth they were able to describe themselves as "followers of the new philosophy," and their opponents recognised the influence of Bacon in the new movement by the use of such epithets as Bacon-faced empirics and the like.

Bacon's work in the great scientific movement of the age seems then to have acted chiefly upon the general habits of thought, and we cannot attribute to him or to his writings the great discoveries of the time. Nevertheless, his work was indirectly of the greatest value, for the scientific movement of the 17th century was not only a series of newly discovered facts. It was like the similar religious and political movement of the time—the expression of an increasing independence of thought, and no instrument was more powerful in furthering this movement than the Novum Organon. We may admit, with Professor Huxley, Bacon's ignorance of the science of his day, but none proclaimed more clearly the nature of the problems of science and the spirit in which to meet them. We may admit the logical deficiencies of his method, for formal accuracy is of minor importance in an eloquent popular appeal.

We allow the justice of Harvey's judgment that, "he writes philosophy like a Lord Chancellor," and rejoice that pupils who needed authoritative teaching more than he did, were found to benefit by his suggestions for the interpretation of Nature, even though they were not converted into discoverers by them.

Mr. Henry Davy has been appointed House Surgeon to the Evelina Hospital for Sick Children, Southwark Bridge Road. He therefore resigns the House Surgeoncy of Guy's to which he has lately been elected.

Mr. John Caldwell Uhthoff, one of our present House Surgeons, has obtained the House Surgeoncy of the Sussex County Hospital at Brighton.

FIRST PRIZE PAPER OF THE PHYSICAL SOCIETY.

By C. H. DOWNES.

(*Concluded from page* 81.)

ACUTE RHEUMATISM AND SALICYLIC ACID.

But this is a slight digression, and I now return to give an abstract of my tables, as to the result of Salicin on temperature. In forty-one out of the hundred cases the temperature fell to normal in six days or less. In three, it fell in one day; in eight, in two days; in thirteen, in three days; seven, in four days; five in five days; five in six days.

Now, owing to the time at which Dr. Sutton's cases were tabulated, he gives no record of the exact temperatures in his cases, and so we have no data with which to compare these dates. But although we cannot be exact in this matter, yet if we take the date at which Dr. Sutton reports the skin to be cool, we may make some approximate comparisons.

As we have previously seen this date averages 14·2 days after the commencement of treatment; and this compares favourably with the sixty-three of my cases in which the temperature is noticed, for in these the average time spent in falling to 98·4° is 7·5 days. So one may say that approximately the time occupied in regaining a normal temperature is less in our cases to day than it was in those patients treated with Mint water alone. But it will be readily seen by a glance at the tables that in many cases the Salicin utterly failed to reduce the temperature, notably in the only fatal one of the series, where temperature rose rapidly to 108° when she died. This case seems to me an admirable one, if considered from a scientific point of view, for it shews that in at least some cases Salicin is ineffectual in reducing the temperature, when it has reached a dangerous height. If you compare this with two cases published in the *Lancet* for Jan. 6, 1879, you will see that the same point was very circumstantially supported in one of them, while in the other an equal amount of Hyperpyrexia was most successfully controlled by means of the cold bath. So that at least we may learn this, and the fact must count for what it is worth, that in the only case in which immediately dangerous pyrexia was developed, Salicin had no effect, and so I think that if my temperature rose to an alarming height, I should (unless the delirium was so great that I resolved to live or die under Salicin) immediately demand to be placed under the nearest pump, and remain there until my temperature or I gave way.

This concludes the brief abstract which time allows me to make, of the result of this mode of treatment; and I will ask your permission to discuss the evidence, and try and arrive at some conclusion,

You will remember that when Dr. Maclagan first called attention to this method, he claimed for his discovery the merit of having been arrived at by a process of deductive reasoning. It was something in this fashion. Nature had arranged that in certain marshy districts Ague should manifest itself; in these districts it appeared that plants grew which were specific against ague. And, therefore, it was probable that wherever nature had sent miasmatic influences to afflict mankind, she had good-naturedly arranged that the Antidotes to the miasmatic influences should flourish. Therefore, wherever Rheumatic Fever was most prevalent, there was the place to search for vegetables to cure it. Therefore, since Willows and Rheumatism have a tendency to inhabit the same localities, the Alkaloid of the Willows should cure Rheumatism. Now, this is a very pretty example of reasoning from the general to the special, and it is rather disappointing to find, that so many cases of Rheumatism seem to exhibit such a calm contempt for their nature provided enemy. For this fact remains to be explained, that patients are longer in the hospital to-day than they were in the old days. A great number of patients who come into this hospital come from the most wretched parts of London, they have been in the least favourable of all situations, for getting rid of any disease, more especially from one requiring such a combination of favourable hygienic conditions as Rheumatism, they are received into the ward, kept warm, properly dieted, and their joints kept at rest, what wonder is it that they should rapidly lose symptoms, which have in most cases been induced by privation and bad nursing? For it is very nearly an everywhere admitted postulate, that although the tendency to Rheumatism is constitutional, yet that the exciting cause is local. And whether we argue that its origin is in miasmatic influences or in more simple causes such as privation and chills, yet the admittance into hospital has in either case the same result, namely, the removal of that exciting cause. And how far this difficulty may tend toward error in our conclusion is I think well shewn in this case. A woman is admitted into Addison Ward with a severe attack of Rheumatic Fever, she is treated with ten grains of Salicylate of Soda every four hours; in a few days her pain is gone and her temperature normal. I asked her how long she had been laid up in her previous attacks. Ten weeks and thirteen weeks respectively. Here was a case clearly demonstrating the value of Salicin. But I ask her where was she living at the time of her previous attacks? Close by the river between the docks and Greenwich. Her husband was a dock labourer and at the time out of work; what was there surprising then that she should get well more quickly under such infinitely more favourable conditions? How far damp and cold will go in developing pain, we must all have experienced, and how far the tendency is increased by anything that has exhausted the vital powers is shewn, or at least has been to me, by the uncomfortable "gnawing" ache, which one gets in some of our joints after a long walk in the wet. I remember, moreover, one of our own Physicians saying that for several weeks he was accustomed to experience severe pain in his shoulders, of a night—he mentioned this to his housekeeper, who immediately diagnosed the cause, she pointed out that the wet bath towel which he used in the morning was always deposited on his night-dress, and this getting damp caused his pain. The locality of the bath towel was changed and immediately the unpleasant nocturnal visitor disappeared, So one would expect that many cases of Acute Rheumatism would be relieved by simple hygienic measures and by physiological rest. And we find that many are very rapidly relieved by Salicin, and the natural tendency is to say those cases that have been bettered by Salicin are those that would have got worse or at least no better without it. But yet we find that people are in hospital just as long or if anything a little longer than they used to be. Certainly if you go round the wards and see how much better the Rheumatism is after Salicin, and if you are of a therapeutically enthusiastic nature and cry "*post hoc, propter hoc*," you will come to know no other conclusion than that Salicin cures Rheumatism, but the some aphorism will lead you to the conclusion that the Tidal train, must be the cause of the Tides, because the Tide always is highest just after the Tidal train comes in. Nevertheless, I do believe that Salicin allays pain, and I am very doubtful if we are using it to the best purpose when we restrict its administration to Rheumatism. Again, I think there can be no doubt that it has an effect in lowering temperature, and this also quite independently of the Rheumatic origin of the pyrexia. Time will not allow me to quote cases in support of these two propositions, so I will only say that I have seen cases in which both these points were illustrated, and I believe it is a statement that many Physicians allow even though they disagree with the assertion that it is a specific for Rheumatism. One argument that may be interesting I will adduce. It has been frequently remarked that the great drawback to the rapidity of recovery under Salicin was the tendency to relapse manifested by the patient, and as I have before remarked this tendency is well illustrated in my cases. Now, is not this somewhat like saying that while the medicine allayed the severity of the symptoms, yet it had little effect on the disease itself? In order to fully appreciate the value of a remedy we must know how matters progress under other treatment. "The duration of Acute Rheumatism is various, in some cases the fever and the

local pains are gone in three or four days, but in the majority of instances they continue till about the tenth to the fourteenth day when the fever disappears and the pains begin to subside. In almost all cases the pain continues till after the fever is gone and sometimes for a very long time afterwards. Dr. Fuller's observations lead him to believe that under ordinary methods of treatment Acute Rheumatism continues for four or five weeks, and patients are generally able to leave the hospital at the end of the sixth week." (Aitkin's Medicine, 1872.)

It is surprising that patients should on an average leave the hospital 40·85 days after admission and in Dr. Fuller's observations almost the precise time should be required, although his remarks referred to the old mode of treatment. Again, Dr. Aitkin remarks that in some cases the fever and pain are gone in three or four days, if we add the words "occasionally the pain has left in two days." Dr. Aitkin's remark will require no great modification; indeed it will exactly represent the state of affairs to day. Again, for the sake of comparison I will quote an extract from a paper by Dr. Owen Rees, on "Treatment by Lemon Juice." "It is my firm conviction that since Lemon Juice has been introduced at Guy's Hospital as a remedy for Acute Rheumatism, the period during which it has become necessary to confine patients to bed has been very materially lessened." And again, Dr. Babington in support of the same treatment published among others six cases, which you will find recorded in "Braithwaite's Retrospect" for 1852. "Of these cases one of these got well in three days, one in five, two in eight, one in nine and one in sixteen days." Again, I believe it was the late Dr. Golding Bird who said that he had seen people suffering from an Acute attack of Rheumatic Fever lose all their pain and fever in three days under treatment by Acetate of Potass. Now, I would ask, can we say more than this on behalf of Salicin? Nothing more will I trouble you with by way of comparison, but there is one possible source of fallacy which one may briefly call attention to. When we cure patients by our so-called Salicin treatment, we practically give them Soda as well as Salicin, and it appears to me that this somewhat complicates matters. Alkalies have for many years been used by able Physicians as proper remedies for Rheumatism and it may be that the Sodic part of the Salicylate of Soda does as much (or as little) good as the Salicylic. One more point I will bring before your notice, and to me it appears a highly important one. Are we quite sure that Salicini does not tend toward inducing heart mischief rather than toward opposing it? You will perhaps remember that out of the hundred cases, nine, according to the Medical Reports, developed cardiac symptoms while under treatment by Salicin. Three of these we rejected on the ground that the symptoms were such as to leave it possible that this complication might havs been in process of formation on admission although no physical signs manifested it. This, however, left six cases in which, without doubt, people coming in with healthy hearts, went out with unhealthy ones. Deduct from these the seventy people who had heart disease on admission and you get one fifth of the healthy hearts becoming diseased under Salicin treatment. I should almost expect this to be the result. Salicin tends toward lowering the power and strength of the patient. Again, quoting from Dr. Aitkin's work, "It (Rheumatic Heart Disease) is more common in women than in men, in those who have been weakened by illness or by profuse blood letting, and in those peculiar states of the system, marked by a deficiency of red globules in the blood, when the heart's irritability is much increased and palpitation is readily induced (Fuller.) It appears to me a question well worth considering whether this lowering action does not tend toward heart disease. This completes all I have to trouble you with and it only remains that I should offer to you my thanks for your patience in listening to me and also a word or two in explanation of, I had almost said apology, for my opinions and for the coarse way in which they have been expressed, the latter I must refer to my own want of judgment in spending too long over the collection of the cases to allow of more than a day to state the results. The opinions I have put forward I know to be in opposition to those held by the great majority of my audience. I can only say that I have endeavoured to be perfectly impartial in the way I have reported the cases, and in forming an opinion from these cases I was rather inclined to be enthusiastic than sceptical. The laurels that Therapeutical Medicine possesses have been more frequently thrown into her lap than gathered by her, but with all my inclination I could not admit the claim of this so-called rational remedy to the place I have heard allotted to it as one of the most important steps forward that Medicine has yet made.

UNIVERSITY OF LONDON.

The following gentlemen have passed the Preliminary Scientific Examination recently held:

1st Division.—Messrs. Cooper, Ensor, Floyer, Green, Hind, Newland, Penfold, Stater, Spong, Target, Winter.

2nd Division.—Player, Smallpiece.

The following gentlemen have just obtained the diploma of Member of the Royal College of Surgeons of England—Messrs. Wright Clowes, Williams, Walter, Morse, Crook, A. Scott, Jago and Elliot.

The following passed in Surgery only—Messrs. Shelswell, Plumber, Phillips, Moon, Knipe.

GUY'S HOSPITAL GAZETTE,
AUGUST, 1879.

THE Session of 1878-79 has come to a close, and with it the hospital career of many of us will be ending. Looking back on the years we have spent in the wards of Guy's, and comparing them with those of friends at other similar institutions, we are at once struck by the great value of the appointments to which we have had access. Pre-eminent among these stands the Full Dressership, of its kind we believe unique, and exemplifying to the full the excellent system in which our training is carried on, that as each man rises to a position of comparative importance, he turns and aids with all his might those placed on the grades below, giving them much of the practice and throwing on them some of the responsibility, which in another hospital and similar office would belong to himself. Thus, as Dresser, the student first finds himself, and comparatively early in his professional career, placed in a position of responsibility and trust, having a real responsibility for the welfare of his patients, though it be wisely tempered by the jurisdiction of the House-Surgeon, and holding a trust towards his Surgeon whereby he feels himself bound loyally and earnestly to carry out to the full the former's line of treatment, even though opposed to his own youthful opinions, remembering at the same time that by failing to report to him any non-fulfilment of his orders, or any other occurrence which might influence the progress of the cases, (though it may not be creditable to himself) he is in effect telling a lie, or what is worse as affecting the greater number, vitiating statistics, and so throwing back the advance of that true knowledge, the progress of which our philosopher-physician lately declared to be our one grand aim, equalling if not excelling that of doing good itself. But can no argument be brought against the existence of an appointment by which such trust and responsibility are placed in hands so untried? Under the circumstances the only reasonable one possible would be that in their work the Dressers did not show themselves worthy of the privilege they possessed. And can such be said? We rejoice to say it can not, as looking round we see the dressings generally well done, and the men as a body proving their claim that what *was* their privilege *is* their right, for fitness makes the former very near akin to the latter. But since we know well that in every flock there are some of dingy hue, so we must confess that during the last year or two there have arisen complaints of laziness, amounting at times to culpable negligence, which have had but too much foundation in fact. We would urge those now holding or about to hold the appointment, to look to it that these spots on their reputation be as few and far between as possible. We would ask them to be exceedingly jealous of their privileged work and thoroughly do the dressings *themselves*, only on the rarest occasion, and as the greatest exception, should such be done in Guy's by other than the dresser, so if at any future time their position be assailed, they will have established their claim on the best possible foundation—that of merit.

THE latest pass list of the Royal College of Surgeons exhibits, in the absence of certain names from its column, a phenomenon too common of late to be styled exceptional. Regularly as examination after examination come round, the result of a short paper and a brief 40 minutes *viva voce*, is the reversing of the almost unanimous verdict arrived at by fellow students and teachers, as to merits of certain candidates, after months, perhaps years, of immediate observation. And yet how many of these adhere to their old opinions; some endeavouring to explain the failure of their protegées as accidental, others as resulting from a tendency to confusion under catch-questioning, an ambiguous mode of answering, &c., &c. But on turning to the Calendar of the College, no mention is made of any of the conditions implied by these expressions as forming impediments to the acquisition of its diploma. The logical conclusion to be drawn from these facts seems to be, that, either from the time or means at their disposal being inadequate, or from their own examining ability being deficient, the examiners are unable to fully test the power and merits of the candidate. However it may be it remains a stigma on the medical profession that its chief entrance gate, a mere filter for separating the generally bad from the generally good, and not intended for minute classification, is guarded in so uncertain and slipshod a manner, for not only are good men occasionally plucked, *but bad men are often passed.*

BACTERIA & THEIR RELATION TO DISEASE.

By J. M. Hobson, M.B.

(*Concluded from page* 77.)

Klein on the bowel lesion of Typhoid Fever.—It will be to our purpose to allude to the presence of organisms only. There is of course an obvious objection, which can be raised to the significance attachable to these observations, and that is, that the mucous membrane of the intestine is constantly exposed to materials which probably always contain such organisms, and that their presence in the dead substance of the membrane is only what is to be expected. If, however, it can be shown that the deposits of organisms are so situated and are found so soon after death as to preclude the possibility of their getting there except during life, we must admit that, they have had some sort of parasitic relationship with the individual.

I think that the presence of organisms within the lumen of Lieberkühn's crypts does not go for much by itself. Klein shows in his paper an obvious inclination to regard Bacteria as forming part of the life-cycle of more elaborate structures, and thinks he has found in the Lieberkühn's crypts a vegetable growth with its spores, like to, if not identical with, the *Crenothrix polyspora* of Cohn described above, which, it seems, was found in well water in a district near Breslau, famous for the occurrence of Typhoid.

Without more knowledge of these fine Botanical questions I am not myself prepared to follow Klein in his suppositions on this point.

Klein, however, found masses of micrococci beneath the epithelium, in the lymph spaces and substance of the mucosa, and in the lymphatic veins and capillaries of the mucosa and sub-mucosa. He says that the spaces beneath the epithelium where the micrococci accumulate are formed by the raising of the epithelium by serous exudation. In one case their appearance was found one or two hours after death, so that I do not see what we can say against the micrococci having got into these places during life.

Again, Klein finds these conditions in the deeper parts—(*a*)—In the sub-mucous tissue, just beneath a lymphatic follicle, a large vein completely blocked by a dark material, and the same material in the lymph spaces and lymphatics. This material is formed of coagulated fibrin and contains micrococci. The tissues in immediate proximity to these dark masses are in a commencing necrotic condition. (*b*)—In a swollen follicle a small artery is blocked by the dark material and this is seen in the surrounding parts. (*c*)—An artery or vein is not *plugged* by the dark material, but a deposit is seen on its wall, and where the same stuff can be traced into the surrounding tissues they are beginning to necrose. (*d*)—In the tissue surrounding a lymph-follicle a similar change to that last mentioned is found which afterwards spreads to the gland itself, *i.e.*, an infiltration with necrosis. Klein figures the same changes in the mesentric glands.

Well, now, though I am not prepared to follow Klein in his inference that the necrotic changes are produced by the *parasitic* growth of micrococci in the tissues, I cannot but admit that the finding of them in such definite groups and at such a depth from the surface negatives the idea that they have found their way thither *post mortem*.

What grounds are there for supposing that the necrotic changes are brought about by the growth in the tissues of micrococcus? It has generally been supposed that the inflammatory overgrowth starves itself by compressing its vessels. Klein admits this as a partial cause but not as the sole cause. He has observed a follical attacked from many points; the bulk of the follicle has been still maintaining itself, but the concomitant growth of organisms and disintegration of the tissues have appeared in the surrounding structures, and have gradually invaded it, or necrotic changes have begun both in the depths and at the surface of a follicle which having been deprived of its epithelium has been brought into direct contact with bacteria, and the two processes have progressed till they met.

I think that with our present knowledge it is very difficult to escape from the conclusion that the bacteria have a causal relationship with the necrotic changes in the bowel, and the explanation I would venture is this—the bacteria on the mucous surface find an entrance through fissures in the epithelium, or otherwise, multiply under it and get into the lymphatic spaces which are so abundant, and into the capillaries. Hence they reach the veins and lymphatics and even the mesenteric glands. Wherever they find a nidus, whether in larger or smaller vessels or lymphatic spaces, they coagulate the plasma and thus starve the tissues. So much for the local effects. How they may effect the whole system we will discuss presently.

Klein on a form of Bacillus in Pneumo-enteritis in the pig—in the Seventh Annual Report of the Local Government Board, 1877-78, Klein describes at length his researches on this disease and figures a form of Bacillus, which he found in the bodies of the animals, in various stages of its development. (Plate I, p. 255.)

The fresh blood did not generally appear to contain the organisms and the results of its inoculation were at best doubtful, except in one sample, in which the slender filaments were present and from which a pig was successfully inoculated. But in another case blood, which when fresh was inoculated without any clear result, when kept three months in a sealed tube, was found "filled with great masses of leptothrix-like filaments and produced the disease in a healthy pig after inoculation." Klein describes his mode of cultivating the Bacillus of Pneumo-enteritis.

The nutrient fluid was aqueous humour and the source of infection was peritoneal fluid from a diseased pig. Some of the fluid was taken and kept for 24 hours in a sealed capillary tube. Then, a clot having formed in the fluid, a minute particle of it was removed and placed in a drop of aqueous humour on a square cover glass. This with the drop on its centre was then inverted over a glass cell cemented to a glass slide, thus forming a little chamber kept air-tight by a little sweet oil placed on the upper smooth surface of the cell. The whole was then placed in the incubator and kept at a temperature of 91°—93° F. for 24 hours, at the end of which time a *second generation* was started in a fresh "cell-specimen" by a repetition of the first process, *i.e.*, by infecting from the generation obtained a second drop of aqueous humour and making up a fresh chamber and placing in the incubator. This "cell-specimen" was removed from the incubator at the end of another 24 hours and the *third generation* set agoing. This, however, was kept in the incubator for several days and then used for inoculation.

Klein recounts two successful inoculations of pigs with *third generations*. He also successfully inoculated two pigs with a *fourth generation*—the fruit of a minute piece of dried lymph from the peritoneum. Klein thus describes the appearances which he saw in his "generations." "The cell-specimen representing the first generation (made with a granule of dried lymph), after having been kept in the incubator from 16 to 24 hours, was examined and seen to contain innumerable extremely small delicate rods of a homogeneous aspect, many of them spinning round and moving about, darting to and fro in a manner precisely similar to that observed in the rods of bacterium termo and bacillus subtilis. Some of them move at one moment, become arrested at the next, and resume their movement again later on. The rods in our specimens are not becterium termo, but correspond in all their characters to bacillus. They are of very various lengths, owing to the elementary rods being arranged in linear series of two, three and more.

"After further 24 hours there were seen, besides numerous bacilli of precisely the same kind as above, a great many exceedingly long motionless leptothrix-like filaments, of a smooth aspect, most of them curved or convoluted. Between these leptothrix filaments, and the short simple bacilli all intermediary forms could be seen. In many of the simple as well as the longer rods, and even in the long filaments, cylindrical, bright, highly refractive spores have made their appearance. There were found a good many apparently free spores oscillating in the fluid. * * * Examining them, however, with a high magnifying power, we become convinced that they are surrounded by a thin hyaline envelope similar to that described both by Professor Cohn on spores of bacillus subtilis of hay-infusion and by Dr. Koch on spores of bacillus anthracis."

Klein repeated and confirmed these observations in the three succeeding generations.

From an eighth generation Klein inoculated successfully three pigs, the race of bacillus being perpetuated so far.

Klein says "in the 'cell-specimens' which I made to establish a fifth, sixth, seventh, and eighth generation, I have been able to follow in all detail the life-history of bacillus; it coincides in every particular with that fully described by Professor Cohn of bacillus of hay-infusion, and by Dr. Koch of bacillus anthracis."

The question of the connection between bacteria and disease does not end with the acute specific fevers. Any disease which is produced by a process of infection from another being demands to be brought to the test, that it may be ascertained whether or not bacteria, or any other minute and lowly organisms, have any causal relationship with it.

I have not spoken of Typhus, Scarlatina, Measles, Cholera, &c., simply because I have no positive facts to adduce on this subject in connection with them, and shall therefore pass on to the infectious diseases *not* called "specific fevers."

How about Erysipelas and Diphtheria? Is there any evidence of a causal relationship between them and the growth of organisms?

Diphtheria.—The researches of Oertel are the best I know of and they, published seven or eight years ago, by no means prove, I think, what they are meant to prove. The results of injecting the virus into one animal and propagating it through a succession proves that it was multiplied, but it is very questionable whether *Diphtheria* was developed, modified by its presence in other animals, or that a *Mycosis* (fungus-like-growth) merely was produced. The larynx was affected only if the virus was introduced there, while the other effects were very wide-spread; such as a general subcutaneous infiltration, changes in lymphatic glands, kidneys and muscular tissue. Micrococci, however, existed in great numbers in the blood and all the affected parts, so that Oertel at least got a disease where the virus was multiplied in the body and bacteria were developed in vast numbers. Oertel thinks that the inoculated disease was specific because he could not get the same results with ordinary putrifying materials. The original source was some tracheal membrane from a child who had died of Diphtheria twelve hours before.

Sanderson who quotes these experiments does not think that Oertel's results justify this last statement as to specificity.

Erysipelas.—In the same blue-book where Burdon Sanderson describes Oertel's experiments he gives accounts of those of Drs. Orth and Lukomsky, two separate observers; the latter having examined the skin and subcutaneous tissue in five fatal cases of erysipelas in the human subject.

Orth's experiments on animals were with erysipelatous exudation with which he inoculated them, and also with a cultivation crop of the organisms which he obtained from the same source. In both series he produced a spreading inflammation like erysipelas both in its naked eye and microscopical appearances. These last corresponded with the previous observations of Volkmann and Steudner, with the addition of the infiltrating fluid containing *Micrococci.*

In Lukomsky's five cases the growth of micrococci was very apparent. In case IV the lymphatics leading in one direction from the wound were choked with micrococci. In I, who died of erysipelas of the head, the lymphatics of the skin of the chest, where the infiltration was slighter, in some places were filled with micrococci; at the edge of the affected part lymphatics were plugged with them, while even nine lines from the margin, in apparently healthy skin, these organisms could be found in the lymphatics. In II, erysipelas followed removal of a tumour in the breast and micrococci were found in extensive colonies almost on the surface of the muscles beneath the wound, although none of the leucocytes of inflammatory exudation were found there. In V, no micrococci could be discovered in the parts not recently attacked, but where the erysipelas had been the day before, the lymphatics and canaliculi contained them. In III, the eresipelas had spread over nearly the whole body, and micrococci were only scantily found in the legs.

Lukomsky's experiments consisted of two series:—(1.) Liquids containing septogenic organisms were injected subcutaneously. (2.) They were applied to wounded surfaces. The animals used were rabbits.

The following is the summary of both series:—(1.) From the seat of inoculation a spreading inflammation having the appearances of erysipelas extended. (2.) The organisms—micrococcus and bacterium—spread along the lymphatic channels and were found most abundantly towards the periphery, in the second series at least. (3.) This process can be induced by a fluid showing no signs of putrescence if it contains micrococci. (4.) Fluid from a dead body or an erysipelatous bulla if it contained no organisms produced no erysipelas.

Septicæmia appears to have all degrees of severity, from a mere transient attack of fever up to a severe and rapidly fatal constitutional disturbance. As seen in man and animals its typical features are classed under three heads by B. Sanderson. (1.) "Loss of muscular strength, particularly of the heart and respiratory muscles." (2.) A "marked tendency which exists to the development in various internal viscera, but more especially in the lungs and those which send their blood to the portal vein, of a congestion, which has as its concomitant results capillary stasis and hæmorrhage and diffused infiltration of the affected tissues." (3.) Brain disorder and fever." I have already stated that Burdon Sanderson, makes an extract by means of alcohol, and water to take up what is soluble, from decomposing muscle, which injected into the body of an animal will surely bring on an attack of septicæmia varying in severity according to the dose; two drachms injected into the blood of a dog would certainly be fatal.

It was suggested by Virchow, that, in order to determine what the real septic virus was, one should isolate all the products of putrescence of animal matters which were contained in the fluids used for inoculation. Such products as peptones, leucin, tyrosin, and indol have beeen injected separately into animals, in the same proportion as they existed in the putrid matters, with negative result; and, "so far as our present knowledge reaches, none of the known chemical products of the putrefactive disintegration of albuminous compounds can be indicated as the cause of the toxic action of putrid infusions."

Professor Bergmann, found that by growing bacteria in a "cultivation fluid" the same septic virus could be obtained, although not for some time. And it is a known fact that the *forms* change during the process of putrefaction, the actively moving *rods* being succeeded by masses of quiescent micrococci, so that it is clear a decided change takes place in the fluid; that either a pabulum becomes elaborated through the growth of the first race suitable for the development of their

successors, or that the race itself becomes modified through a change which its own growth has effected in the nutrient fluid. These facts will explain why Dr. Hillier could inject *washed* bacteria into himself and animals without any evil result, the virus not having been injected at the same time. Of course, we want to know why the bacteria did not go on to develop the virus in the body, for they were certainly not killed by the washing, as they readily grew in a suitable medium.

Ferrier and Osler have found organisms in the blood of healthy persons. Ferrier, found sarcina-like bodies which could be propagated out of the body in tubes. Osler, too, found groups of minute bodies which on a warm stage individualised themselves into active bodies. How are these facts to be explained? Either the right kind of bacteria have not gained admission, or the soil has been hostile to the elaboration of the virus. P. Granitz, in Virchow's archives, says that just as the growth of the fungi is checked by competition with more vigorously growing organisms, so that of the ferment organisms is restrained by competition with actively growing cells, *e.g.*, pas cells.

To complete the proof that the poison of septicæmia is not a living organisms, I will quote the experiments of Anders, Bergmann's pupil.

(1.) He cultivated his bacteria and made the cultivating fluid virulent.

(2.) He found that the amount of salicylic acid which he intended to add to that fluid was harmless to the animal—"without physiological effect."

(3.) He found that after adding the salicylic acid a few drops of the original fluid failed to produce a crop of bacteria in another lot of cultivating fluid, *i.e.*, it was sterilised.

(4.) *It yet retained its virulence.*

The same results were obtained with chlorine.

Have we not here a clue to the connection between bacterial growth and disease? Having proved that bacteria do not cause septicæmia directly, any more—to use Professor Sanderson's illustration—than the yeast-plant causes drunkenness, is it likely that Bacillus authracis or spirochœte Obermeiri cause Splenic or Relapsing Fever respectively by *paracitism*, as Dr. T. Maclagan takes for granted in his book? (Germ Theory.) The next thing to be done is to cultivate these different organisms, sterilise the fluid, and then inoculate with it and see if we get any of the symptoms of Relapsing Fever, Splenic Fever, Small Pox, or Typhoid.

Dr. Maclagan's book tests the "Germ Theory" by applying it to the explanation of the differeut phenomena of the specific fevers. As regards the incubation, it explains that very well; indeed, the incubation of fevers is a strong *a priori* argument in favour of *Contagium vivum*. That a person should be attached pretty suddenly is in accordence with the known facts concerning the multiplication bacteria. The fact of each cell dividing into two, and that, in the case of Bacterium termo, once every hour, shows how a large number, say a million, though not large enough to produce any symptoms might, by doubling in the course of an hour or so, cause symptoms, which would be called sudden. At least we can easily see how a person might feel quite well when he went to bed and wake up feverish in the morning. The number of organisms received at infection would influence the length of incubation, though from the time fever-level, was reached the severity would be the same in many different cases. Then the different rate of multiplication in different species would account for different averages in the several diseases.

Dr. Maclagan puts forward the plausible theory that the parasites exhaust their pabulum after a time, just as fungi are said to do in the formation of "fairy-rings." This, if true, would explain why the disease "runs its course," and often protects more or less against itself. The non-exhaustion of the pabulum, on the other hand, would explain the non-protection in other cases, and the gradual fading of protection in other cases again, would be explained by the re-elaboration of the pabulum. But how does syphilis so eminently protect against itself? We look here to the profound impression made by the disease on the nutrition—habits of the tissues, we look upon them as henceforth "Syphilised," and no more resenting as an insult the intrusion of syphilitic virus.

Another notion of Dr. Maclagan's is, that the local lesions are due to the organisms finding nidus there for themselves, and I believe that, with regard to some diseases, at least, he is right, though in those where the existence of bacteria has not been demonstrated and in the rose spots of Typhoid an election on the part the *poison*, as distinct from organisms, might account for the effects, just as we see that Arsenic elects to attack the stomach and other parts. But Dr. Maclagan seems to regard the seats of local lesion as *Nurseries* from whence the *parasites* go out on their adventures, while my idea is that the local spots are *laboratories* rather, from whence, when elaborated, the *virus*—a physico-chemical thing—is poured out to circulate in the blood-vessels

Ulcerative endocarditis is a well known affection in which ulceration of the valves of the heart takes place, more often perhaps of the mitral. It seems to affect both formerly healthy valves and those the subjects of a previous endocarditis, now thickened and permanently damaged. The disease is indicated during life by the affection of remote parts, or by constitutional disturbance, together with the physical, signs of valvular incompetence. The first—the remote effects—are caused by plugging of considerable vessels by detached masses from the valves and vary widely according to the part *embolised*, notably paralysis in cerebral plugging and gangrene from plugging of a vessel in a limb. These effects may occur without any constitutional affection, and *vice versa*. The latter are of a nature to suggest the name *arterial pyæmia*, proposed formerly by Dr. Wilks. Probably there are two quite distinct forms of ulcerative endocarditis; one *simple* and causing symptoms from embolism merely; the other *septic* and giving rise to constitutional disturbance as well, or only. Heiberg and Weigert, have examined the anatomical conditions histologically in Pyæmia and Small Pox, respectively, and have found in the valves colonies of micrococci, and in other organs the same clumps in the midst of "puncti-form foci of dead alive material." Now, these little spots of *mycosis* are clearly associated with the changes going on in the valves of a like nature, for in the same body larger *infarcts* may be found. We have here probably nurseries and laboratories started all over the body, from whence an elaborated, less palpable poison is mixed with the blood stream poisoning the tissues. Perhaps the same thing is true with regard to Typhoid, Small-Pox, Erysipelas, Diphtheria, and those other fevers where organisms have not yet been found.

Since writing the above, I have learned from Dr. Wilks of a case where the constitutional symptoms co-existed not with ulceration but with a softening blood clot in a pouched valve. Without doubt this class of cases wants working out before we can speak positively about their connection with entophytic growth.

But what shall we say of Syphilis, *specific disease* as we so often call it? Some one is said to have found organisms here, too. Surely they have nothing to do with it. A disease so chronic, so life-long as it often is, so profoundly affecting the tissues, can hardly depend upon the growth of an *entophyte* which in all other cases is so short-lived. Yet what demanded a theory of *contagium vivum* in the acute specific fevers demands a theory of *contagium vivum* here also. Inoculation, incubation, breeding true, multiplying itself in endless succession; all these point in the same direction. But there may be more than one theory of *contayium vivum* compatible with facts. An entophytic theory accords with the facts of the diseases we have been discussing, but it does not seem to do so with the facts of syphilis.

Now, it seems that living cells may in some mysterious way —yet, nevertheless, the notion is no trivial one, for it connects itself with the mysterious and all important facts of sperm influence and heridity—*infect* other cells, as is evidenced by cancer cells on a serous surface, having similar cancer cells opposite them on the opposing serous surface which they have been touching. So may some of the cells of the syphilised body, most likely the leucocytes, when transferred from an abraded surface on the diseased to an abraded surface on the healthy individual, multiply within his body and in that mysterious way infect his tissues—most likely his connective tissue cells, for I suppose that it is these which offend in syphilis—so that they build up sundry skin eruptions, nodes, iritis, gummta, thickenings of the intima of his smaller arteries. Or their action may be more analogous to that of the septic bacteria. Having gained an entrance into the body there they remain, a race of Ishmaelites, manufacturing virus from one generation to another, as they wander in the blood stream and lymph stream, poisoning the old race into misbehaviour. A third hypothesis might be, that the imported cells themselves build up the inflammatory products, behaving like an invading but inferior race, setting up a reign of decadence. Perhaps the second hypothesis is most in accordance with facts, seeing that a longer or shorter period of apparently healthy nutrition sets in in most cases, if some are not actually cured.

I cannot bring this communication to a conclusion without saying something on *germicides* or sterilising agents, and the best facts that I know of I shall draw still from Burdon Sanderson.

"The best known antiseptics and those which are most certain, are chlorine, potassic permanganate, carbolic acid, and salicylic acid, and lastly, the camphor-like products obtained by the distillation of the essential oils of thyme and carraway-thymol and carvol. We know by experiment that these bodies differ very materially in antiseptic, or as it is sometimes called, germicidal power. My friend Dr. Buchanan Baxter, found that in a cultivating solution * * * chlorine produced sterilisation in the proportion of 1 in 100,000, potassic permanganate sterilisation in the proportion of 1 in 10,000, and carbolic acid only when in the proportion of 1 per cent." About the same time Dr. Bucholtz carried on quite independent investigations on a larger number of disinfectants; and, moreover, his researches were directed to determining both the amount required to pevent germination and to check it when it had already begun. It seems that a small percentage of salicylic acid is enough to prevent putrefaction in animal fluids.

I have already pointed out the necessity for experiments with the poisons of splenic fever, &c., in order to determine if they are at all analogous in their action to that of septicæmia. If we found that a substance like salicylic acid would render any of these matters sterile, the next step would be to give that drug to a patient or an animal suffering from one of these diseases and try to cut it short as we can Rheumatic Fever. In fact, we need not wait for laboratory experiments, but may, and I think should, begin at once with salicylic acid in one of the specific fevers—say Typhoid—and see if we can cut it short. I think the maxim that a fever must run its course may now hamper us in treatment. The maxim was useful when men thought that they could put out the fire by taking off some of the coals, but we have learnt many lessons since then. Supposing that the symptoms of a fever are due to the circulation of physico-chemical poison steadily being given out by organisms which are making a sojourn in the tissues of the blood; though it is absolutely absurd to think that one could put an end to the fever by drawing off some of the poisoned fluid so long as there were tissues to be poisoned and organisms to elaborate fresh poison, yet the true and obvious treatment would be to kill off all the organisms. It used to be said that the treatment for Rheumatic Fever was "a month in bed," but during the last three years we have learnt at Guy's to look for the pains to disappear in two or three days under salicylic acid.

My readers must not suppose that I am arguing from Rheumatic Fever to Typhoid. I merely use the case of the former as an illustration of how we may hope to cut short the acute specific fevers and other acute contagious diseases.

Correspondence.

The Editor wishes it to be distinctly understood that he is not in any way responsible for opinions expressed by Correspondents.

TO THE EDITOR OF THE *Guy's Hospital Gazette.*"

Sir,—Salicylic Acid and Salicylate of Soda have been brought before the notice of the profession a great deal of late, in order to reduce high temperatures; but I do not know whether it has for the use made of it by me a week or two ago.

During my "take in" a man presented himself with retention of the urine, and after a hot bath and opium, Mr. Durham introduced a ½ into his bladder. This was allowed to remain in thirty-six hours, and when removed found to be crusted with phosphates. No. 3 was then introduced, and at the end of twenty-nine hours found to be similarly crusted, and the urine alkaline and "ropy." I then introduced a No. 6 and at the same time gave

℞ Soda Salicytalis gr. xxx.
Ex. Mist. Amon. Acetat. ℥ t.d.s.

And allowed this catheter to remain in sixty-four hours, and when removed, there was not a trace of phosphates on it, and the urine strongly acid, and not so "ropy." I immediately introduced No. 8, and as that passed easily introduced No. 10, and allowed it to remain in eighty hours. The urine was now dark coloured, fairly clear and not "ropy," and the catheter when removed had no phosphates on it.

As I believe that the accumulation of phosphates is one of the chief objections to allowing a catheter to remain for long in the bladder, I throw this out as a hint for remedying this evil.

Whether it will be of any use in dissolving phosphatic calarli remains to be seen.

I was led to try this drug from seeing a man suffering from Cystitis, following injury to the cord, treated by it, and with marked success. He was under the care of Drs. Pavy and Taylor.

I remain,
PERCY M. WOOD.

UNIVERSAL PESTILENCE PREDICTED.—The conjunction at perihelion of the four great planets—Jupiter, Uranus, Saturn and Neptune—occurs in 1880, for the first time since the opening of the Christian era. It is predicted that this event will be attended by dire and dreadful disturbances of the atmosphere of this planet. Extreme vicissitudes of weather, deluges followed by droughts, causing the failure of crops, famine and pestilence. The vitality of every living thing of the surface of the earth will be tested to the utmost. The theory is that from 1880 to 1885 there is to be a general and prolonged period of pestilence and woe.

APPOINTMENTS, JULY, 1879.

Resident Obstetrics.—R. W. White, (Sept.) P. M. Wood, (Oct.) T. A. I. Howell (Nov.)

Clinical Assistants.—R. F. Cox, T. H. Morse, A. Scott, E. A. Starling, F. L. Pilkington, F. T. Wilkinson.

Dressers.—W. A. Lane, E. Fielding, (Mr. Cooper Forster), E. O. Stuart, G. R. Marsh, (Mr. Bryant), H. A. Clowes, (Mr. Durham), H. H. Stinge, (Mr. Howse).

Dressers in Ege Wards.—H. H. Austen, C. H. Downes, G. J. Wilson, (Sept.) H. P. B. Flanagan, W. W. Pryn, F. W. Pilkington, (Nov.)

Medical Ward Clerks.—H. E. Charles, J. Smith, B. H. Lane, T. B. Luscombe, L. W. K. Phillips, J. M. Prendergast, J. R. Rolston, D. C. Trott, C. Atkin, H. T. Barrett, H. A. Fotherby, J. W. Woodruff, W. C. Fenwick, W. C. Heamden, T. R. Atkinson.

Assistant-Surgeon's Dressers.—J. Harrison, R. T. Jones, G. W. Mullis, W. H. Closse, (Mr. Davis-Colley) A. T. Perkins, A. J. Hind, E. G. Williams, G. H. Capes (Mr. Lucas) F. F. Bayes, J. W. Hodgson, G. F. Dixon, F. Eastes, (Mr. Golding-Bird), J. W. Nicholson, B. Scott, G. T. Woolley, D. G. Edwards, (Mr. Jacobson).

Assistant-Physician's Clerks.—E. Elliot, B. Stude, (Dr. Fagge, F. J. Elliott, L. W. and K. Phillips, (Dr. Pye-Smith), F. H. Shaw H. G. Ashwell, (Dr. Taylor), F. S. Pilkington, L. Burroughs (Dr. Goodhart).

Obstetric Out-patients Clerks.—E. Elliott, C. R. O. Ganard, W. Spong, (1st half), G. C. S. Perkins, W. H. Newnham, J. J. Udale, (2nd half).

Dental Surgeon's Dressers.—J. B. Trapp, S. O. Stuart, W. J. D. Morris.

Anat. Surgeon's Dressers.—G. N. Pitt, W. Spong, (Nov. and Dec.)

Post-mortem Clerks.—P. Pigott, (Aug.), J. J. Udale, J. Rigby, (Sept.), C. Clary, P. H. Gardner, (Oct.), A. S. Stokes, F. V. Duckworth, (Nov.)

Assistant-Surgeon's Clerks.—R. W. Brogden, T. Unicume, (Mr. Davies-Colley), W. E. Rudd, A. G. Willdey, (Mr. Lucas), E. T. Trevor, R. A. Milligan, (W. Golding-Bird), W. L. W. Marshall, T. F. Jeyes, (Mr. Jacobson).

Dressers in Surgery.—B. P. Bartlett, W. Dendy, J. Dowson, E. D. Minter, W. D. J. Morris, G. N. Pitt, H. R. Osborne, F. N. Pedley, G. S. Pollard, F. E. Row, W. E. Rudd, T. Unicume, L. E. Shaw, E. H. Booth, C. T. Griffiths, J. J. Townly, A. G. Wildey, W. E. Fielden.

Surgical Ward Clerks.—A. Bolton, G. L. L. Lawson, P. Pigott, O. T. Currie, J. H. Lister, J. W. F. Long, G. Ulting, R. A. Milligan, H. Blatherwick, J. H. Champ, G. S. Mahomed, R. H. Perks, L. S. W. Stephens, P. Warner, J. I. Palmer, F. C. Payne.

ON DUTY FOR SEPTEMBER, 1879.

House Physicians—Baldwin and Crooke.

House Surgeons—Penny and Uhthoff.

Resident Obstetrics—Pedley and R. W. White.

RESIDENT DRESSERS.

September 3rd—Cockle, (Mr. Cooper Forster).
„ 10th—Crewe, (Mr. Bryant).
„ 17th—Wood, (Mr. Durham).
„ 24th—Rake, (Mr. Howse).

THE RESULTS OF THE ANNUAL EXAMINATIONS ARE THUS DECLARED.

The Treasurer's Gold Medal in Medicine—Mr. H. E. B. Flanagan.

The Treasurer's Gold Medal in Surgery—Mr. Morrison.

PRIZES.

First year's Students.

Edward James Wenyon—First Prize, £50.
Louis Albert Dunn—Second Prize £25.
Walter Thomas Harris—Third Prize £10 10s.
Sidney Worthington—Certificate.
Holland Hodgson Wright—Certificate.
Alfred E. C. Woodhouse—Certificate.
William T. F. Davies—Certificate.

JOSEPH HOARE PRIZES.

Second Year's Students.

Edwin Leonard Aderly—First Prize £25.
John Alfred Parry Price—Second Prize £10.
Edward Hargrave Booth—Certificate.
Walter Chester Dendy—Cetificate.
Robert Howell Perks—Certificate.
Lockhart E. W. Stephens—Certificate.

THIRD YEAR'S STUDENTS.

Georgo Ryding Marsh—£27 10s.
John W. Sanders—£27 10s.
Edwin A. Starling—Certificate.

THE SONG OF THE STETHOSCOPE.

A PROFESSIONAL DITTY.

There was a young man in Boston town,
He bought him a Stethoscope nice and new,
All mounted and finished and polished down,
With an ivory cap and a stopper too.
It happened a spider within did crawl,
And spun a web of ample size,
Wherein there chanced one day to fall
A couple of very impudent flies.
The first was a bottle fly, big and blue,
The second was smaller, and thin and long;
So there was a concert between the two,
Like an octave flute and a tavern gong.
Now, being from Paris but recently,
This fine young man would show his skill;
And so they gave him, his hand to try,
A hospital patient, extremely ill.
Some said that his *liver* was short of *bile*,
And some that his heart was over size,
While some kept arguing all the while
He was crammed with *tubercles* up to his eyes.
This fine young man then up stepped he,
And all the doctors made a pause;
Said he,—"The man must die, you see,
By the fifty-seventh of Louis' Laws.
But since the case is a desperate one,
To explore his chest it may be well;
For if he should die and it were not done,
You know the *autopsy* would not tell."
Then out his Stethoscope he took,
And on it placed his curious ear;

"*Mon Dieu!*" said he, with a knowing look,
"Why here is sound that is mighty queer!
The *bourdounement* is very clear, —
Amphoric buzzing, as I'm alive!"
Five doctors took their turn to hear;
"*Amphoric buzzing*," said all the five.
"There's *Empyema* beyond a doubt;
We'll plunge a *trocar* in his side,"
The diagnosis was made out,
They tapped the patient; so he died.
Now, such as hate new-fashioned toys
Began to look extremely glum;
They said that rattles were made for boys,
And vowed that his buzzing was all a hum.
There was an old lady had long been sick,
And what was the matter none did know;
Her pulse was slow, though her tongue was quick;
To her this knowing youth must go.
So there the dear old lady sat,
With phials and boxes all in a row;
She asked the young doctor what he was at,
To thump her and tumble her ruffles so.
Now, when the Stethoscope came out,
The flies began to buzz and whiz;
"Oho! the matter is clear, no doubt;
An *aneurism* there plainly is.
The *bruit de râpe* and the *bruit de scie*,
And the *bruit de diable* are all combined;
How happy Bouillard would be,
If he a case like this could find!"
Now, when the neighbouring doctors found
A case so rare had been described,
They every day her ribs did pound
In squads of twenty; so she died.
Then six young damsels, slight and frail,
Received this kind young doctor's cares;
They all were getting slim and pale,
And short of breath on mounting stairs.
They all made rhymes with "sighs" and "skies"
And loathed their puddings and buttered rolls,
And dieted much to their friends surprise,
On pickles and pencils, and chalk and coals.
So fast their little hearts did bound,
The frightened insects buzzed the more;
So over all their chests he found
The *râle tiffiant* and *râles sonore*.
He shook his head;—"there's grave disease,—
I greatly fear you all must die;
A slight *post-mortem*, if you please,
Surviving friends would gratify."
The six young damsels wept aloud;
Which so prevailed on six young men,
That each his honest love avowed;
Whereat they all got well again.
This poor young man was all aghast;
The price of Stethoscopes came down;
And so he was reduced at last
To practise in a country town.
The doctors being very sore,
A Stethoscope they did devise
That had a rammer to clear the bore,
With a knob on the end to kill the flies.
Now use your ears, all you that can,
But don't forget to mind your eyes,
Or you may be cheated like this young man,
By a couple of silly, abnormal flies.

From "Wit and Humour," by the Author of the "Autocrat of the Breakfast Table."

STATISTICAL REPORT OF GUY'S LYING-IN CHARITY FOR JUNE, 1879.

Number of Women attended		221
One Death.		
Of these there were in their 1st confinement	24	
" " 2nd "	38	
" " 3rd "	23	
" " 4th "	27	
" " 5th "	22	
" " 6th "	22	
" " 7th "	14	
" " 8th "	13	
" " 9th "	11	
" " 10th "	10	
" " 11th "	4	
" " 12th "	6	
" " 13th "	2	
		—221
Number of children born		225
Alive	215	
Dead	10	
Of these there were Single Births	217	
Dual Births	4	
Number of full time Children		223
Males alive	113	
Males dead	5	
Females alive	100	
Females dead	5	
Premature Children		2
Males alive	1	
Females alive	1	
Presentations—		
Vertex	219	
Breech	2	
Footling	3	
Hand	1	
		— 225
Operations—		
Low Forceps	3	

J. POLAND,
Junior in Charity for June, 1879.

GUY'S HOSPITAL GAZETTE,
SEPTEMBER, 1879.

ALBUMINURIA IN RELATION TO BRIGHT'S KIDNEY.

A PAPER READ BEFORE THE PHYSICAL SOCIETY BY JOHN COCK.

The vast importance of the subject of my paper will render unnecessary any apology in respect of the choice of it. Since the time of Dr. Bright of Guy's Hospital, who first demonstrated a connection between the presence of Albumen in the Urine and the occurrence of certain forms of anatomical lesions in the Kidney, no subject perhaps, has received a greater share of close attention from Pathological and Clinical observers than this.

I should be unpatriotic did I not mention that Dr. Blackall, of Exeter, ascertained the presence of coagulable Urine in certain cases of Dropsy, some years previously to the discoveries of Dr. Bright, but it was reserved for the latter Physician to trace the connection of this symptom with well-marked renal derangement, and in other ways to define clearly the disease, or group of diseases, which is known to-day by his name throughout the world.

In considering this subject, I shall not attempt to bring before you the clinical phenomena associated with it, except so far as I may need to refer to some indisputable fact, in support of my argument, but will confine my attention to the Pathological aspect of it.

I have thought it advisable to notice briefly the derangements of renal structure which take place in Bright's disease, and for my purpose, it will be sufficient to consider only the so-called inflammatory forms, known by the names of Acute Bright's Disease, together with Chronic Bright's Disease, and omitting entirely the Lardaceous, or Waxy, and the Fatty Kidney, which may be regarded merely as forms of degeneration.

One result of the great researches that have been undertaken, in regard to my subject, has been the introduction of a multiplicity of names by which to distinguish it, which have been given merely in accordance with the view entertained by some individual observer. I shall not employ any of these terms, as to be intelligible it is only necessary to refer to Acute and Chronic Bright's Disease, so that the various classifications need not detain us.

It will be sufficient to point out, *first*, the kidney found in the earlier stage of the complaint, which becomes successively the congested, the mottled, and conglomerate, and large white kidney, according to the duration of the disease; and, *secondly*, the small red, granular, or contracted kidney, usually associated with Chronic Disease; and, *thirdly*, mixed forms, which may be supposed to result either from the atrophy and degeneration of the acutely diseased organ, or from an exacerbation or new acute attack occurring in a kidney already the subject of the chronic lesion. Probably either process will produce the same result.

For the object of this paper, it will be convenient to give a Pathology of Bright's Kidney, not generally taught in this country, but which has been commonly accepted of late years in Germany. I allude to the views of Frerichs and Reinhardt, who hold that ordinary inflammatory Nephritis (Acute and Chronic Bright's Disease) is essentially a single disease, and that the large white kidney, found in protracted cases of Acute Disease, passes by degrees to the granular and contracted form. In Rosenstein's recent edition of his work it appears to be adopted even without discussion. But, in England, the opposite opinion has steadily gained ground and has been especially supported by Drs. Wilks, Johnson and Dickinson. For my part, I have never had any opportunity of hearing a discussion on the conflicting views held on this matter, so for my own profit, if for nothing else, I would submit it to the consideration of this Society, in the hope of being able to arrive at an approximation to truth, if truth itself be unattainable, but for certain reasons I shall adopt the view of the Pathology of Bright's Kidney as taught in the Foreign Schools.

The anatomical lesions found in cases of Acute Bright's disease are those described by Frerichs as the first stage of Bright's Disease, that of hyperœmia and incipient exudation. The kidney is much enlarged, its surface is smooth, the tunica albuginea is opaque, injected, and easily detached. The increase in size is due to the swelling of the cortical substance, which, when cut into, exudes a sanious fluid. At this stage already a certain amount of whiteness and opacity may be detected in the tubules.

Later than this the kidneys become much paler than natural, but retain their large size. The structural changes are the same as in the recent disease, but have been increased by duration, and continue to make the organs whiter and larger until the classical large white Kidney is fully developed. The microscropic changes as described by Drs. Dickinson and Grainger Stuart are *essentially confined to the uriniefrous tubules*, their epithelial lining is enormously increased, and the tubes as a consequence are extremely distended and enlarged, but in them are found intact, though swollen, epithelial cells. It is to be noted, that in the progress of the Disease, a number of the Distended Tubes become broken up into a Granular Dèbris.

And now we come to the small, red, contracted, or granular Kidney, that which is associated with Chronic Bright's Disease "par excellence," and between which and that just described there is a great gulf fixed by English Pathologists. Across this gulf the Germans have contrived to throw a bridge, and to my mind, with no indifferent success, so, with your permission we will traverse it together.

The smooth white Kidney proceeds (in some cases

at least) to a third stage, that of degeneration and atrophy, the organ which has hitherto been enlarged, becomes reduced in weight and bulk, often it is smaller and lighter than a normal kidney. The surface hitherto smooth and uniform is now lobulated, and studded with granulations. The consistence is no longer soft, but exceedingly firm and tough. Upon section, the *cortical* portion is found to have become greatly diminished, and in some cases, to have almost disappeared. *At points corresponding to the elevations and granulations* the Microscope still shows the urinary tubules and Malpighian corpuscles enlarged, but in the contracted parts the tubules are empty, shrivelled, and collapsed, and nothing may remain of them but an ill-defined fibrous mass. Many authors describe an increase of connective Tissue in the Kidney found after cases of Chronic Bright's Disease, and refer to this supposed condition as an essential cause of the abnormal structure which is found to exist. This is denied by others. In the Book on Pathology of Drs. Wilks and Moxon, it is thought that "there is a little increase (of fibrous tissue) but not much. The patches, apparently of fibrous tissue, figured in Dr. Dickinson's excellent drawings, we have always seen, but high powers resolve these patches into the remains of Tubes."

From a consideration of the anatomical derangements observed in the several stages of Bright's Disease as given in the foregoing account, and from some clinical phenomena associated with them, I would deduce a proposition which is well expressed in the words of Dr. George Johnson. "All the changes of structure commence in the secreting cells of the gland, and are the result of an effort made by the cells to eliminate from the blood some abnormal products, some materials which do not naturally enter into the composition of the Renal secretion." According to this author, a morbid condition of the epithelium is the *first* in the order of events, and the urine does not become albuminous, nor is there any other sign of great congestion of the Kidney until the disease of the cells is so extensive as to be incompatible with the proper performance of their functions, and it is found that the characters presented by the urine, in regard to the Albumen contained in it, bear, for the most part, a remarkable relationship to the stage which has been attained by the morbid process going on in the Tubules of the Kidney. Observers are agreed that Albumen is found in greatest quantity in the urine in cases of Acute Disease. At the onset of an attack, the urine is much diminished in quantity, dark, thin, grumous and containing abundance of Albumen. In these cases doubtless much of the albuminous material is present as a consequence of the direct escape of blood from the renal capillaries, owing to their rupture. But in the progress of the complaint Albuminuria is present in an equal, if not in a greater degree, and it is to be noticed that at this time, the Kidneys show *a marked advance in the cell change, are acquiring a vastly increased proliferation of the tubular secreting epithelium, which becomes swollen and cloudy from the imbibition of an Albuminous fluid.* In this stage, the urine is sometimes so much charged with the coagulable material as to become almost solid on being boiled.

On the other hand, when the disease has become chronic, that is, when large numbers of tubes have been denuded of their epithelium, have become shrivelled and contracted into fibrous looking masses, Albuminuria is far less constant, and when present, is never so severe. In support of this I may quote the terse and forcible terms of Dr. Mahomed, "Albuminuria is *present* in acute and *absent* in chronic disease." If this opinion do not express a fact, it is at least very near to it.

If, then, we regard the organic changes of the Kidney in connection with Albuminuria, it will be found that the presence of the Albumen bears a direct relation in point of quantity to the amount of cell-change going on in the cortical part of the Kidney, and this statement will hold good in all the degrees in which the cell-change may prevail.

In the Acute Disease, when we find the amount of Albumen in the urine diminishing, then, invariably associated with it, the granular matter, casts, and shed epithelium become less, and the urine becomes more abundant, showing that the inflammation is subsiding and that the cell-activity has undergone a check.

Again, when the Chronic Disease assumes an active condition, when it undergoes an exacerbation, shown by the re-appearance or increase of casts, granular matter and Albumen in the urine, then not less surely, if an opportunity be given for examination, it will be found that the epithelium has begun to exhibit signs of irritation, by becoming swollen, cloudy, granular, and immensely proliferated.

And now, assuming the phenomena described in the preceding account to be in the main correct, I shall attempt to place them in the relation to each other of cause and effect, partly by a consideration of certain facts bearing on this subject, which I shall presently submit to you, and partly by regarding minutely, and endeavouring to interpret, the anatomical structure of the secreting portion and of the vascular tufts of the Kidney.

The importance of the symptom of Renal Disease with which we are now concerned is very great. According to Niemeyer no elaborate demonstration is required to show that, in addition to the ordinary expenditure of the blood, a daily loss from it of large quantities of Albumen, amounting to twelve or twenty grammes, in twenty-four hours, cannot be made good by the daily supply of nourishment.

In the first place I think it is proper to make a clear and sharp distinction between the temporary and the

permanent kinds of Albuminuria, the one occurs in many diseases, besides that of Bright, and is not associated with any alteration whatever of the Kidney structure. It happens especially in some specific Fevers, as Cholera, Typhus, and Diphtheria, and in some Lung Affections, as Pneumonia and Phthisis. On this point I will quote from Drs. Wilks and Moxon, who think "it is well to recognise strongly the distinction between this class of cases (that is, the temporary ones, not having Kidney Disease) on the one hand, and those that prove obstinate * * * on the other." The former class of cases, being outside the aim of this paper, it will not be attempted to discuss them.

A most interesting question now arises in connection with this subject. Why does Albumen appear in the urine in cases of Bright's Disease; what is the proximate cause of this phenomenon? This has been dealt with in various ways by different authorities, and as it seems to be a point eminently suitable for discussion, I shall devote the rest of my space, to an attempt to answer it, as far as its nature will permit.

Among the theories by which it is sought to account for Albuminuria, that which refers this condition to the effect of Mechanical Pressure is conspicuous. Dr. Mahomed especially upholds this view, which is thought to be warranted by the results of certain experiments which have been performed, regarding the diffusion of Albuminous Fluids through Animal membranes, and it is found that at very high pressure Albumen does really transude through the membranous septum. Just in this way it is supposed that the albumen of the blood is forced through the capillary vessels of the Malpighian corpuscle, by the mere *vis a tergo* of the pumping action of the Heart. A fatal objection to this experiment, to my mind, consists in the fact that it is performed on a DEAD, and not on a LIVING animal membrane, and from this, none but the ordinary physical laws of diffusion are supposed to have any share in the matter. But it seems to me that the distance between this experiment performed in this way outside the body, and the function of the Kidney, is actually as wide as the abyss which divides *Life* from *Death*, and that it is impossible to place any reliance upon it. It is a fact that, *inside the body*, its processes are regulated by laws which overwhelm the ordinary physical ones. A single fact will suffice to illustrate what I mean. Urea, a highly diffusible body, is *found almost constantly in blood but not in muscular tissue.*

I would ask, could this separation occur, outside the body? Would not this diffusible solid be found evenly distributed if the restraining influence were withheld?

More than this, there are some facts which go to show that the Malpighian capillaries never allow Albumen to pass through them, even under the greatest pressure that can be brought to bear on them. M. Stock is, has made some direct experiments, in relation to this point. This Physiologist found that the Ligature of the Abdominal Aorta below the origin of the renal arteries, and in addition, the ligature of one renal artery, so as to cause the greatest possible amount of pressure upon the opposite Kidney, never caused Albuminuria, unless indeed, the capillaries were burst by the strain, in which case, of course, blood would be poured out, and both Albumen and blood cells would be found in the urine.

From this I should infer that mere Mechanical Pressure within the Malpighian Tufts, cannot be the *immediate* cause of Albuminuria.

In Niemeyer's Book on Medicine, we find that this author thinks that the Albuminuria in Bright's Disease cannot be satisfactorily accounted for. This sympton must depend on the destruction and degeneration of the epithelium. The fact that normal urine should not contain Albumen, is, he says, extremely perplexing to the Physiologists. They are almost forced to suppose that the Albumen *does* transude (from the glomerulus, I take it) together with the water and the salts, and are reduced to the hypothesis that its absence from the normal urine is in some way connected with the epithelial lining of the uriniferous tubules, the transuded Albumen either becoming assimilated for the nutrition of the epithelium, or else its diffusion into the tubules receiving some modification as yet unknown to us, from the epithelium.

Against this, it may be urged, that the most profuse discharge of Albumen in the urine, does not take place during the period of *destruction* and *degeneration* of the renal cells, which are associated with the later stages of the disease, but happens in the earlier stages, when the immense increase, and proliferation occurs in the cells, showing a great augmentation of activity. Moreover, if we turn to the minute anatomy of the Malpighian Body, an arrangement may be discovered, which perhaps may have great significance. On the black-board I have copied, as well as I might, a representation of the Malpighian capsule, with its vascular tuft, taken from Frey's Histology. I ask your attention to the fact that while the epithelium lining the interior of the capsule is thin and squamous, that covering the free surface of the vessels is of a *totally different character*, being regularly arranged, much thicker, and almost cuboidal in shape. This, I would suggest, if it have any physiological meaning at all, is for the purpose of *dis-allowing the escape of Albumen at this point*, and at least one example can be given, in which a layer of epithelium not differing very widely from this, successfully rejects, and bars the passage of, even a highly diffusible crystalloid body, like Strychnia. I refer to the experiment of Mr. Savory, who having opened the uterus of a pregnant bitch, injected a solution of this poison into the body of two of the fœtuses.

In less than half-an-hour the bitch died from Tetanic Spasms, the fœtuses operated on were also dead, whilst the others were *alive and active*. These experiments were repeated on other animals with the like results. In these cases, there can be no doubt, I think, that the epithelial covering of the fœtal part of the placenta prevented the passage of the Strychnia contained in the blood into the young, although the villi are actually bathed in, and exposed in the fullest manner, to the influence of the maternal blood. It will hardly be denied, that if the ordinary laws of diffusion had operation in this matter, the poison would have passed as freely from the mother to the young, as in the reverse direction, which would have been indicated by the death of the entire number of the latter.

So that the question, why does Albumen appear in the urine in cases of Bright's Disease still remains unanswered. In further considering this subject. I shall avail myself of some observations on the behaviour of certain substances in their transit through the Kidney, and of facts respecting the nature of these substances themselves, to deduce from them arguments in favour of another view, which will appear presently. It is well known to you, that Professor Graham has divided bodies into two groups, in accordance with their structure, viz., crystalloids and colloids, the former having the power of passing readily through organic septa, and being highly diffusible, but the latter passing through with extreme difficulty, even under great pressure and lack the quality of diffusibility. It will be of advantage to regard the process of separation by the Kidneys of some bodies of the former class—the crystalloids. We have a good example of this in the secretion of *Sugar* by these organs, in cases of Diabetes. It is well ascertained that in these cases, the blood is overcharged with sugar derived from the alimentary canal, and this abnormal element is removed from it by various emunctories, but chiefly by the Kidneys. According to Dr. G. Johnson, it can rarely happen that an opportunity offers for examining the Kidneys in an early stage of Diabetes, so as to ascertain the condition of the cells at that period. It is highly probable, however, that, from the commencement, the secretion of sugar is accompanied by changes in the appearance of the cells, and after the long continuance of the disease these changes are very decided.

In two cases of death from Diabetes, the convoluted tubes of the Kidney were remarkably opaque and having a yellowish tinge, the cells being also opaque and containing a large quantity of fine granular matter with oil. We have here an instance of the elimination of a *crystalloid* body by the Kidneys, and it is important to mark *what portion of the gland* is concerned in it.

Another example toward the same end is found in the case of *Urea*. Now this is a crystalloid, and possesses the power of diffusion in a very high degree, so that it might be reasoned, *a priori*, that this of all bodies might pass through the glomerulus, with the watery part of the urine, but this seems contrary to the fact, since according to Niemeyer, certain well attested cases of Uræmic Poisoning have occurred in which there *was no suppression of urine*. If, therefore, *Urea*, be eliminated with the watery part of the urine, surely it could not accumulate in the system, in these cases, where diuresis was present. It follows, inevitably, that Urea has need of the aid of cells for its separation.

Now, if *Sugar*, as we have before seen, and *Urea*, a highly *diffusible crystalloid*, are not transuded from the Malpighian body, but require a more complex apparatus, I would ask, how much more should Albumen, a *Colloid*?

If the evidence in favour of these cases should seem to have not sufficient weight, there is yet another in which a direct proof can be furnished. I refer to the experiments of Heidenhain. This Physiologist injected into the veins of animals in which the urinary flow had been stopped by section of the spinal cord below the medulla, a solution of the sulph-indigotate of soda, and on killing the animals at proper times, and examining the Kidneys he found that the ligament passed from the blood into the renal epithelium and from thence into the channels of the tubules. There were no traces of the pigment having passed by the glomeruli, and the cells which could be seen distinctly to take up and eject it were those lining the so-called secreting tubules, and portions of the loops of Henle.

The behaviour of the Kidney towards some kinds of Albumen, is, to me, very suggestive. It seems to be well established that this organ can take cognisance of, and deal in a different way with, certain forms of Albuminous bodies, to that it does to the serum of blood. In the paper most recently read before this Society, Mr. Bayes told us that a low form of Albumen is found in the urine of Dyspeptic patients, coagulating at a lower temperature than the ordinary Albumen of Bright's Disease. Another instance is referred to by Dr. Lander Brunton, Dr. Pavy, and others, by which it is shown that when ordinary Egg-Albumen is injected beneath the skin, or into a systemic vein, it *appears again in the urine*. Now, I would ask, in what way is this function of separating useless, and foreign kinds of Albumen, performed? Is it not reasonable to ascribe to the Kidney cells a virtue, which is possessed by so many other cells, a certain selective power by which they are enabled to separate from the blood, some kinds of Albumen, not capable of being assimilated, and which are, in that respect, a sort of foreign body in the circulation?

Against this it may be said, that the Egg-Albumen transudes through the Malpighian tuft by virtue of some physical difference between it and blood serum,

by which it is allowed to pass the barrier here presented to it. But, if there is any difference between crude Egg-Albumen, and those kinds capable of assimilation, it is that, *the latter are far more diffusible than the former.* Now, the *assimilated Albumen does not transude,* and, if the white of egg were assimilated, it also would be prevented from transuding, which brings us to the conclusion, that, the Egg-Albumen, *by being made more diffusible, fails to diffuse,* which is absurd.

Finally, having regard to all these things, the constant association of Albuminuria with cell change in the Kidney; the behaviour of this organ toward many bodies with which it has to deal; the nature of these bodies; the structure of the Malpighian corpuscle; and the direct experiments adduced; the theory of Albuminuria that I propose, is that it really consists in AN ACTIVE SECRETION OF THIS MATERIAL BY THE RENAL CELLS, which become, as I have said in an earlier part of this Paper, cloudy, opaque, vastly proliferated, and swollen by the imbibition of an Albuminous Fluid, that these cells burst and discharge their contents into the urinary channels, their envelopes forming (though this is a little outside my subject) the granular matter, casts, and debris, which are found in Bright's Disease.

And now I commend it to your judgment.

THE TREATMENT OF EXTENSIVE BURNS DURING THE STAGE OF COLLAPSE.

A SUGGESTION BY ROBERT S. WAINEWRIGHT.

When I was Dresser to Mr. Cooper Forster and also as House-Surgeon at Guy's, it fell to my lot to personally carry out the treatment of many cases of very extensive burns, also I have noticed how such burns are treated in the hospital generally. With much diffidence I would suggest a slight alteration in the method of local treatment during the Stage of Collapse, that is to say for about the first 48 hours, which I think might prove useful in cases where a very large portion of the skin is burnt or scalded.

In order to lose no time whilst the patient's clothes are being most carefully cut off (in doing which the utmost care should be taken not to drag off any of the epidermis), the bed should be prepared in the following manner. If possible, have a water-bed; cover this with a large piece of macintosh, over the macintosh put two blankets, and on the blankets a layer of cotton-wool. A sheet is then to be dipped into Carron oil and then without wringing it too much, to be wrapped round the patient so as to completely envelop him from the neck to the soles of the feet. He is then to be placed on the bed and the cotton-wool, blankets, and finally the macintosh wrapped round him. If the arms or chest be much burnt, to avoid rubbing, wrap a piece of oiled lint round the trunk between the arms and the chest before the sheet is put on.

The sheet would probably need to be changed every sixth hour, and, also whenever the patient had to micturate and if the bowels were opened, but in these extensive burns, the patient does not pass urine frequently, and the bowels seldom act.

The above treatment, whether novel or not I do not know, is an endeavour to cause the patient less pain and exhaustion than that produced by the usual method of dressing each part singly with oil lint, cotton-wool, and bandages, which often takes three-quarters-of-an-hour or more; also, however carefully the patient is dressed, the bandages are liable to slip or be dragged off by the restlessness of the patient, and the burnt parts get rubbed and exposed to the air. This would be obviated by the plan I recommend, and also the air would be very completely excluded, and a suitable warmth maintained.

It is perhaps only fair to say that I have never at present put this method of treatment into actual practice, and that it should only be employed for the first 48 hours at most, whilst the patient is prostrated and suffering from shock.

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William Eckett Fielden, Guy's.

*Obtained number of marks qualifying for Exhibition.
†Obtained number of marks qualifying for a Medal.

GUY'S HOSPITAL GAZETTE,

SEPTEMBER, 1879.

FROM the Prospectus of the Guy's Physical Society just issued, we see that one very important alteration has been made. It relates to that rule by which, no member who is legally qualified to practice his profession is eligible as a candidate for the Prizes offered for competition, an exception being now made in that attached to the Senior Essay (that on a medical subject) for which qualified members may compete, provided they have not completed their fourth year.

This innovation we hail as likely to be productive of much benefit, but we should like to see it extended further in the matter of the Papers read before the Society. How often have we heard the complaint made that the majority of these were Physiological or Histological or otherwise Theoretical (the last word being used in its commonly-accepted though by no means correct signification), to the exclusion of Medicine, Surgery and the like, considered to be the more practical subjects. It has always seemed to us that this state of things was the natural result of the Society's regulations. The men who have seen most practice, those who have been previously trained at a country Hospital and have taken their appointments at Guy's early, being those from whom such papers could most reasonably be expected, are the very ones to qualify before the end of their fourth year and so be debarred from competition. We have always failed to see the process of reasoning by which a 1st M.B. man in his third or fourth year is allowed to read a paper or write an essay on such a subject as Physiology, thus competing with college men of the first and second years, while the qualified fourth year's, man is prevented from entering the lists with those of his own standing in Medicine and Surgery. Again, if the Society exist not only to promote healthy emulation among the students, but also to stimulate to original work, how much more is such to be expected from men, who, set free from the perpetual worry and "grind" of the College, are at leisure to turn their thoughts and energies in whatever direction the natural bent of their mind incline them.

THE STOCKER TESTIMONIAL.

SIR,

We trust that you will allow us to make public through your columns, the following statement concerning the testimonial raised in memory of the late Mr. James Stocker, who for many years acted as Resident Medical Officer and Apothecary at Guy's Hospital.

The subscriptions amounted in all to £406 14s. 6d.; the cost of printing and posting circulars, £17 18s. 7½d.; leaving a balance of £388 15s. 10½d. Of this, a cheque for £50, was forwarded on June 5th, for Mrs. Stocker's immediate use. The remainder, at the desire of many of the subscribers, will be placed in the hands of Mr. Stocker's executors, to be invested for Mrs. Stocker's use during her lifetime, and afterwards to be divided equally for the benefit of the Misses Stocker and Mr. Henry Stocker, who is an invalid.

We are, Sir, faithfully yours,
R. CLEMENT LUCAS,
H. E. WADDY, } *Hon. Secs.*

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C. White, Esq.	1	1	0
Dr. J. H. Galton	1	1	0
E. Forbes Gaitskell, Esq.	1	1	0
G. Rendle, Esq.	1	1	0
Dr. A. S. Taylor, F.R.S.	2	2	0
Edward Berney, Esq.	1	1	0
Dr. C. Holman, J.P.	1	1	0
Fred. Wallace, Esq.	1	1	0
Dr. R. U. Wallace	1	1	0
Henry Hicks, Esq.	0	10	0
Richard Phillips, Esq.	2	2	0
H. R. G.	1	0	0
W. Parkinson, Esq.	1	1	0
R. E. Carrington, M.B.	1	1	0
Dr. C. S. Willett	2	2	0
Dr. Debus, F.R.S.	1	1	0
H. E. Dixon, Esq.	1	1	0
T. A. Buck, M.B.	1	1	0
C. L. Evershed, Esq.	2	2	0
S. Knaggs, Esq.	1	1	0
H. Lucas, Esq.	1	1	0
J. W. Combs, Esq.	0	5	0
Dr. W. R. Grove	1	1	0
F. Barry, Esq.	1	1	0
Lancelot Hare, Esq.	3	3	0
E. B. Terry, Esq.	1	1	0
J. N. Cregeen, Esq.	2	2	0
Edward Kingsford, Esq.	2	2	0
Percival Kingsford, Esq.	1	1	0
A. Evershed, Esq.	2	2	0
John Gathergood, Esq.	0	10	6
W. Blaker, Esq.	1	1	0
W. C. Burdett, Esq.	1	1	0
C. H. Golding-Bird, M.B.	1	1	0
F. Durham, Esq.	1	1	0
Ben. Duke, Esq.	1	1	0
Olliver T. Duke, Esq.	1	1	0
R. N. Robson, Esq.	1	0	0
H. Davy, M.B.	1	1	0
Hugh Bennett, Esq.	1	1	0
Maurice Duke, Esq.	0	10	0
Dr. A. L. Galabin	0	10	6
G. A. Wright, M.B.	1	1	0
E. Cockell, Esq.	1	1	0
J. Birchenall, Esq.	2	2	0
Dr. W. A. Guy, F.R.S.	1	1	0
Joseph Hinton, Esq.	1	1	0
Dr. Birkbeck Nevins	1	1	0
Dr. G. H. Savage	1	1	0
W. H. Harsant, Esq.	1	1	0
Dr. F. C. Turner	1	1	0
J. C. Roberts, Esq.	2	2	0
Dr. F. Taylor	1	1	0
Christopher Johnson, Esq.	1	0	0
Dr. Goodhart	1	1	0
Dr. George Eastes	1	1	0
W. Dryland, Esq.	1	1	0
W. L. Purves, Esq.	2	2	0
Arthur B. Ewen, Esq.	1	1	0
Maurice G. Evans, Esq.	1	1	0
W. J. Gruggen, Esq.	1	1	0
W. Gruggen, Esq.	1	1	0
J. King Sampson, Esq.	1	1	0
Messrs. Roper & Horsley	1	1	0
John Arminson, Esq.	1	1	0
Edgar Duke, Esq.	0	10	6
Charles Higgens, Esq.	2	2	0
G. D. Deeping, Esq.	1	1	0
J. W. Hayward, Esq.	0	10	6
George Chater, Esq.	2	2	0
E. Pye-Smith, Esq.	2	2	0
W. H. Aldersey, Esq.	1	1	0
Dr. Adam Bealey	1	1	0
J. M. Hobson, M.B.	1	1	0
John J. Nason, M.B.	1	1	0
Dr. B. N. Dalton	1	1	0
J. Sydney Turner, Esq.	1	1	0
Dr. Horace Johnson	1	1	0
John Mann, Esq.	1	1	0
Dr. J. B. Hodgson	1	1	0
Dr. A. Williams	1	1	0
Dr. Cooke	1	1	0

John Bowes, Esq.	1	1	0
Dr. Herbert Airey	1	1	0
W. H. Lamb, M.B., B.S.	1	1	0
Henry Osborne, Esq.	1	1	0
H. D. Forty, Esq.	2	2	0
W. J. Stodhart, Esq.	1	1	0
W. S. May, Esq.	0	10	6
R. M. Cole, Esq.	1	1	0
A. W. Sydney Turner, Esq.	0	10	0
J. W. Morison, Esq.	1	1	0
H. B. Reynolds, Esq.	0	10	6
H. A. Martin, Esq.	1	1	0
Dr. R. Eager	2	2	0

After the Statement of Accounts was sent to the Committee, a subscription of £5 was received.—R.C.L.

READING.

Two or three aspects of this subject seem to deserve consideration, on the approach of another session.

First, we will say a few words about the relation of reading to practical work. When shall we see fewer of the two extremes—the reading men and the practical men? Is there no compromise? It is encouraging to find this aimed at more than formerly in our text-books. Thus, on opening Erichsen, we find on the title page a quaint but apposite quotation from Bacon:—"They be the best Chirurgeons, which being learned incline to the traditions of experience, or being empirics incline to the methods of learning." We think there is too great a tendency to regard appointments and reading as two separate eras in hospital existence. Men get through their appointments as quickly as they can and then read for examinations. Under the present system of examinations, we must admit that this is more or less justifiable, but surely it is no reason why they should not read during their appointments. The most successful compromise would appear to be, to read up the same evening any new cases seen during the day, whether in the wards or out-patient rooms. Certainly there are often serious obstacles in the way: we are tired or sleepy, or have other engagements; but we think that this plan if pursued as far as possible would bring its own reward; for not only would our reading be rendered easier, but the particular diseases would be more firmly stamped on our memory by the agency of these illustrative cases. Obviously, we are more thoroughly able to compare the facts of the case as seen by ourselves with those related in the text-book, if we read up the case a few hours after, than if we wait some weeks or months. Short marginal notes in the text-book of cases we have seen are of great value in freshening our memories when reading the subject a second time.

Perhaps the greatest value of reading lies in the assistance it lends to diagnosis, especially when this is conducted *per viam exclusionis*. For the more we have read of the possible nature of a certain tumour, or the various interpretations of a particular symptom, the more will be the possibilities which will pass through our minds, and our diagnosis will be careful in proportion. There is always a danger, however, in forming very far-fetched diagnoses; these, indeed, sound very nice at the bedside, but how often do we see these elaborate conceptions perish miserably beneath the scalpel of the surgeon or the knife of the pathological demonstrator.

As to the value of reading in treatment, we cannot say very much. Our knowledge here is chiefly empirical, and the methods of application are far better learnt practically. When a number of different treatments for a disease exist, and we have tried several unsuccessfully, reading may be of use in pointing out other methods; but, speaking generally, treatment is at present best learnt in the operating theatre or wards.

This part of the subject may be brought to a close by quoting a sentence occurring in the very interesting introduction to Billroth's Surgical Pathology: "When you conduct yourself as a passive receptacle you may, it is true, acquire the name of a very 'learned person,' but if you do not awaken your knowledge into life, you will never become a good 'practising physician.'" These words seem to us to possess great weight, coming as they do from a man who unites deep scientific research with sound practice.

The next point which we propose to discuss is the difference between reading and cramming. We admit that during the first part of our course at the hospital more or less of the latter process must be undergone, especially when examinations are near. But in medicine and surgery it is different, for here we have not to read about so much that we do not see. But it is not so much reading without seeing that constitutes cramming; it is the restriction of one's attention to one particular book or portion of a book and learning this almost by heart. Surely this must tend to make us narrow-minded, and we think the course pursued by the University of London in not naming any special books to be used in preparation for its examinations is a wise one. We will here quote some lines from "Aurora Leigh," which seem to have a direct bearing on the subject of cramming:—

> "We get no good
> By being ungenerous, even to a book,
> And calculating profits,—so much help
> By so much reading. It is rather when
> We gloriously forget ourselves and plunge
> Soul forward, headlong into a book profound;
> Impassioned for its beauty and salt of truth,
> 'Tis then we get the right good from a book."

This, of course, was written in reference to general subjects, but cannot we claim it also for medical reading. Do we not get a clearer insight into a subject by carefully reading through the book and trying to follow the writer's thoughts and intents, than by stopping after every few pages to enquire; will they ask this? We make all allowances for examinations, we admit that they often compel us to act against our better judgment, but we think that when they are only looming in the distance a little wider range of thought and reading is desirable. We will not attempt to deny that a great part of anatomy is only to be learnt by continual cramming, though Mr. Hilton and others have done much to supplement empirical facts by scientific reasons. But anatomy stands alone in this respect: in studying the other branches of medicine we have to call more to our aid sound common sense and logical deduction.

Lastly, we have to consider the mental analysis involved in reading. This, we contend, is very considerable in the present day, for in proportion as writers have increased, so have methods and opinions. Thus, our powers of discrimination and criticism are often taxed to the utter-

most, and we are almost tempted to exclaim with Falkland:—

"Alas! what boots the midnight oil?
The madness of the struggling mind?
Oh, vague the hope, and vain the toil,
Which only leave us doubly blind!"

But however discouraging the great difference of opinion and teaching which we meet with, we have always before us the pleasant prospect of being able, sooner or later, to possess opinions of our own, based upon a safe foundation—that of observation and experience.

NOTES ON A CASE OF HÆMORRHAGE IN THE PONS.

(From the Note Book of the House Physician.)

A man, æt. 47, who had left his home for a walk at 7 p.m. apparently well, having made no complaints during the day of any equivocal symptoms, was found about 9·30 in the streets and brought to the hospital.

When admitted about 9·30 he presented the following symptoms. Complete unconsciousness; face and lips pallid; conjunctivæ insensitive; pupils equally contracted to small points; breathing stertorous, about ten to the minute, with long intervals; pulse small, hard and incompressible; extremities cold. On examination of the heart a soft loud systolic mitral bruit was heard at apex.

The question of diagnosis turned on opium, external injury, epilepsy, cerebral tumour, uræmia or hæmorrhage into some part of the nervous centre, there being no smell of alcoholic liquors in the breath.

Following the rule laid down in case of doubt, the stomach pump was applied to examine the contents of the stomach, but with no result. There was no external injury discoverable. Epilepsy was excluded by the absence of convulsion, blueness and frothing at the mouth. The absence of any unilateral paralysis and the symmetery of the pupils negatived the existence of cerebral tumour, while the supposition of uræmia was disposed of by no albumen being found in the urine when drawn off by the catheter. Thus hæmorrhage was left as a fair conclusion, and now came the diagnosis as to position. Considering the equality of the contracted pupils, the absence of paralysis, and the condition of the respiration, one concluded it must be in the pons.

The man was put to bed with head elevated, and hot-water bottles applied to the extremities. A question arose as to bleeding him on account of the condition of his pulse, but after Trousseau's able article on bleeding in cerebral hæmorrhage, one was indisposed to try it, hence the prosiac treatment. The following notes were now made:—

11·45, Temperature 100·4°

12·10, Temperature 102°, Respiration as before.

1·10 a.m., Temperature 104·4°, Pulse 144, Respiration 12.

1·30 a.m., Pulse somewhat softer, lungs somewhat clogged with mucus.

2 a.m., Temperature 105°. Pulse 136, Respiration 15. Extremities warm, breathing still stertorous and no consciousness.

4·30 a.m., Death, pupils previously becoming dilated.

5 a.m., Temperature 105·5°.

Post Mortem.—Brain 45 ounces.
Heart 20 „
Liver 50 „
Spleen 4 „
Kidneys 9 „

A large hæmorrhage into the pons, about the size of a barcelona nut, affecting the upper vertical segment, with a small tail into the fourth ventricle, the iter being ruptured.

Heart hypertrophied, mitral valves thickened but no vegetation.

Kidneys mixed, granular.

Arteries at base of brain atheromatous.

"The hydraulic arrangements for supplying the brain with blood, are only second in importance to its own organisation. . . . It is a good sign to have one's feet grow cold when he is writing. A great writer and speaker once told me that he often wrote with his feet in hot water; but for this, *all* his blood would have run into his head, as the mercury sometimes withdraws into the ball of a thermometer."

"The lunatic, the lover, and the poet
Are of imagination all compact."

"Insanity is often the logic of an accurate mind overtasked. Good mental machinery ought to break its own wheels and levers, if anything is thurst among them suddenly, which tends to stop them or reverse their motion. A weak mind does not accumulate force enough to hurt itself; stupidity often saves a man from going mad."

Dr. Hilton Fagge has been appointed Examiner in Medicine to the University of London.

VIVISECTION.

Dr. Pye-Smith's recent address at Sheffield having been wholly occupied with the Vivisection question, I thought it might not be uninteresting to readers of the *Gazette* to have some account of the Vivisection Bill and the evidence of the Royal Commission.

It would seem that some time ago, a number of people in England were seized with the belief, that a vast amount of cruelty was practised in this country under the name of Vivisection. Now, let us see whether or not this belief was justified.

At the end of the *Report of the Royal Commission for the practice of subjecting live animals to experiments for scientific purposes*, there is a table showing the number of animals used at each school of medicine in the United Kingdom, and excluding frogs, the total number is about 750. Of these, by far the greater number were in a state of anæsthesia and of those that were not the experiments that were performed on them were so trifling that anæsthetics would be quite superfluous, for example, 102 were used at the Brown Institute and none were anæsthetised, for "the operation in every case was extremely trifling. It consisted either in opening a vessel for obtaining blood for Analysis or injecting infecting-material, either into the circulation, into a serous cavity, or under the skin." In the case of opening the vessel the pain was no more than many people underwent periodically in the days of blood letting, and in the case of injecting the pain is no more than that of a prick with a needle. It is unnecessary to count up the number of frogs, for in nearly all cases they are pithed. This is done as follows:—The frog is held in the left hand, and a sharp scalpel in the right, the base of the occipital bone is then felt for, and the knife plunged in the neck just below it by this operation the medulla oblongata is divided, so that death is instantaneous. Then in order to prevent the reflex movements of the spinal cord interfering with the experiment, a wire is passed down the spinal canal. In cold blooded animals the heart continues to beat such a long time after section of the medulla oblongata, that experiments on the circulation can still be performed, and it is for these experiments that by far the greater number of frogs are used, and if the creature be not pithed or anæsthetised in any way, it is only fair to remember that they are extremely low on the animal scale compared to human beings, and it is therefore quite unfair to estimate their sensibility by our own. There is one other point worthy of notice in this table from which it appears that the four London Medical Schools in which vivisection is most employed are Guy's, St. Bartholomew's, University College, and King's College. Now, no one will deny that these are the four best medical schools in London, and turn out far better men for doctors than do all the other schools put together. No one would like to draw any conclusions from this, but nevertheless the fact is worthy of notice.

The "Handbook for the Physiological Laboratory" was made the subject of a few questions to almost every witness examined before the commission. It seems that the whole thing has been misunderstood, for unfortunately it professes to be for beginners, and the public seem to have considered that "the meaning of that is that any young man who feels inclined to study physiology, whether he has had previous education or not in that direction, is to take up the book and go and try to do the experiments."* But what the authors really seem to have meant, is that any man who has already studied physiology from books and wants to begin experiments for himself in *a physiological laboratory* will find in their book certain directions which will enable him to carry out his experiments more successfully. For it is to be remembered, as Professor Huxley said, that the very term physiological laboratory to all people connected with physiology, implies a place under the command of a skilled physiologist. It would be just as absurd to suppose that a Conic Sections book for beginners implied that it was a book intended for any young man, whether or no he had had previous instruction in Algebra or Euclid. If the above explanation be borne in mind a great deal of repugnance at the worst experiments in the book will disappear, and it is also to be remembered, as one of the authors told Mr. Erichsen, that anæsthetics are understood to be used without directions always being given, much the same as they are in a book on operative surgery. Dr. Ferrier's "Experimental Researches in Cerebral Physiology and Pathology in the West Riding Lunatic Asylum Medical Reports," seems to have impressed some people very much with the cruelty of vivisections, and undoubtedly a few of the experiments are cruel, but then, as Dr. Ferrier said, there is no need to repeat them when once the fact which is sought is established. But to show how the apparent barbarity vanishes if the reader understands the subject, let us take a few examples. In the first place, at the very beginning of the article, it says, "It may be mentioned here once for all, that before and throughout all the following experiments ether or chloroform was administered." On page 38 an experiment is described in which it was said the animal was only partially insensible, but this by no means implies that the creature felt pain, for any one who has had anything to do with surgical operations very well knows that the patient will moan and show the greatest apparent evidence of pain, but on recovery from the chloroform will declare that he remembers nothing about the operation and felt no pain whatever. Most people would think that if an animal showed "signs of pain" it would necessarily be in pain, but one who understood the subject would very well know that the animal may have its head cut off and yet show decided signs of pain merely due to the reflex action of the spinal cord.

It is simply a repetition of the old, old story that people have got into a mess and asserted all sorts of falsehoods because they have meddled with a subject they do not understand. A man opening the book in the middle reads an account of an experiment which strikes him as dreadful and he immediately rushes off to his friends, calls a meeting, and sends a petition to Parliament on a subject about which he knows nothing and has never read a line before in his life, and has not even read the preface which states that anæsthetics are to be used. To ladies, more especially, this would apply, for they were most energetic in, and understood least about, the question. Miss Frances Power Cobbe's paper about vivisection is a gross libel on the medical students of this country, and they have shown their wonderful good sense in not deigning to notice it. Fancy calling the Huxleys, Wilks, Murchisons, Jenners, Pagets, and Gulls of the next gen-

* Question 2662 of Blue Book.

eration, "mere lads of the Bob Sawyer type," and yet we find that term applied by that lady to medical students who witness vivisections.

In order to show that vivisections are carried on in a way in which the feelings of the animal are eminently consulted, the following description of a vivisection as given by one who has witnessed many and assisted in several may not be inappropriate. Chloroform or ether or a mixture of chloroform and ether, is first given to the animal. This may be effected in various ways, either the creature may be put for a minute or so in a box together with a sponge full of chloroform, when complete anæsthesia will soon be produced, or else an apparatus similar to that used for giving surgical patients chloroform may be used, or if the animal be small, like a rabbit, a little piece of sponge soaked in chloroform may be quite sufficient if it be held over the animal's nose. Anæsthesia being produced by any of these means, the creature is fastened to an instrument technically known as a rabbit holder, or something similar, by means of which the animal is held securely in a position most convenient to the experimenter; then the safest and most effectual way to keep up anæsthesia is to inject a few grains of chloral hydrate subcutaneously, by means of which unconsciousness is kept up for a long time. On the slightest sign of returning consciousness more of the anæsthetic is administered. Before the animal has time to recover from insensibility it is killed unless this would vitiate the experiment. Throughout the whole experiment the greatest regard is shown for the creature, and in some cases the animal is killed from over anxiety to give chloroform. There is no doubt that some of the experiments in some few instances have been cruel. As an example, one should read the evidence of Mr. J. B. Mills about a small veterinary college. But here it would seem the whole management of the school is so disgraceful that it is sufficient to account for anything.

Dr. Klein's answers have several times been mentioned to show that the feelings of the animals are held in utter disregard, but there are a good many things to be borne in mind whilst reading what he says, as it appears in the report of the evidence taken before the commission. To begin with, he denies that what is there stated is a correct account of what he actually said,and accordingly the proofs as corrected by him are placed in the appendix, and on comparing them with his answers in the former part of the book it will be seen that they are much modified for the better. To take an example, he says in the appendix, "I am as much opposed as anyone in this country to unnecessary or unprofitable cruelty to animals." Dr. Klein also distinctly states several times that the reason why he does not use anæsthetics in every case is that in the majority of his experiments, which were of a pathological nature the pain involved was very trifling. It must also be remembered that Dr. Klein is only just over from Vienna, and that there the general public are willing to trust the medical and physiological experimenters, and believe that they will be as humane as possible, so that to a foreigner this commission would seem, to say the least of it, unfair. However, even if we suppose that Dr. Klein is not as careful as English experimenters, the number of animals sacrificed by him in a *painful* manner would not probably amount to twenty in the course of a year.

There is no doubt that the great body of medical students would not for a moment tolerate a cruel experiment. A lecturer at one of the British medical schools proposed to show the action of a certain poison on a bird, the students refused to witness the experiment and the bird was let off. Probably no man knows more about medical students than Dr. Pavy, who has lectured on physiology for twenty years and always introduced vivisection experiments. Speaking of anæsthetics, he says, "I feel perfectly satisfied that anything else would not be tolerated for a moment. No class of students—if I know anything about medical students—would tolerate the introduction of a living animal into the theatre and a vivesection performed on that animal whilst the animal was not under the influence of some anæsthetic." Again, speaking of the experiment on recurrent sensibility described in the "Hand book," he says he is sure that it would not be performed at Guy's and that he thinks no teacher of physiology would demonstrate it to his class. Sir William Gull also expresses himself very strongly on the same point, he says, "I believe that in a medical school anything like cruelty or indifference to suffering would be scouted by the public opinion of the students. I have never seen any indifference."

As some people deny that vivisection experiments have done any good, it may be excused if rather a long quotation is made from the *British Medical Journal*.

It is as follows:—"What has vivisection done for medical science? It has succeeded in advancing our knowledge of physiology by (1) discovery of two classes of nerves, sensory and motor, by Sir Charles Bell, (2) discovery of the functions (motor) of the *portio dura* of the seventh pair by Sir Charles Bell. Previously to the discovery the portio dura was often cut by surgeons for the cure of neuralgia! (3) discovery of the functions of the anterior and posterior roots of the spinal nerves by Sir Charles Bell, (4) discovery of the functions of the anterior and posterior columns of the spinal cord by Brown-Séguard and others, (5) discovery of one of the functions of the cerebellum in co-ordinating muscular movements by Flourens and others, (6) discovery of the functions of the grey matter on the surface of the cerebral hemispheres, as connected with sensation and volition, by Flourens, Magendie, &c., (7) discovery of the motor-functions of the grey matter covering certain convolutions in the anterior part of the cerebral hemispheres by Hitzig, Fritsch,Ferrier, Gudden and Nothaagel,(8)demonstration of the circulation of the blood by Harvey, (9) measurement of the stalic force of the head, and discovery of other hydraulic phenomena of the circulation by Stephen Hale, Ludwig, &c., (10) discovery that atmospheric air is necessary to the maintenance of life, and that when stupified by its withdrawal, animals may be resuscitated by re-admitting it. by Robert Boyle in 1670, (11) discovery that atmospheric air by continued breathing becomes vitiated and unfit for respiration, by Boyle, (12) discovery that air was not only vitiated but diminished in volume by the respiration of animals, by Mayo in 1674 (13) discovery of the relation as regards respiration, between animal and vegetable life, by Priestly in 1772, (14) great discoveries by Lavoisier on the physiology of respiration from 1775 to 1780; namely, that respiration acts only on the respirable portion of the air, or oxygen, while the remainder, nitrogen, is entirely passive in the process; secondly, that when animals are confined in a limited space, they die when they have absorbed or con-

verted into carbonic acid the greater part of the oxygen, and so reduced the air to the state of an irrespirable gas (15) numerous facts in the physiology of digestion observed by Blondlot, Schwanne, Bernard, Lehmann and others by experiments on animals, (16) the discovery of the functions of the lacteals by Colin Bernard, Ludwig, and others, (17) the discovery of the functions of the eighth pair of nerves in relation to deglutition, phonation respiration and cardiac action by John Read and others, (18) the discovery of the functions of the sympathetic system of nerves, by Pourfour der Peht in 1727, Dupey in 1816, Rachel in 1837, John Read and Brown-Séquard (19) the discovery of the phenomena of the diastaltic or reflex action by Marshall Hall, (20) the discovery of the action of light on the retina by Holmgren, Dewar and M'Kendrick, (21) the discovery of the glycogenic function of the liver, by Bernard, Macdonnell, Pavy &c., (22) the discoveries of the whole series of facts in the domain of electro physiology, by Mattencee, Du Bois-Reymond, Pflüger, and many others. These discoveries have important practical bearings."

(To be continued.)

RESIDENT DRESSERS FOR OCTOBER.

October 1st.—W. Lane (Mr. Forster).
„ 8th.—Stuart (Mr. Bryant).
„ 15th.—H. A. Clowes (Mr. Durham).
„ 22nd.—H. Bovill (Mr. Howse).
„ 29th.—E. Fielding (Mr. Forster).

"The great minds are those with a wide span, that couple truths related to, but far removed from, each other. Logicians carry the surveyor's chain over the track of which these are the true explorers."

FOR SALE.—A Crouch's Microscope, almost as good as new. Glass rotating stage. Deep and shallow eyepieces, with indicator to the latter. ¼-in. and ½-in. objectives. Double nosepiece. Stand Condenser. Suitable for Microscope Class. Apply to Baker.

STATISTICAL REPORT OF GUY'S LYING-IN CHARITY FOR JULY, 1879.

Number of Women attended		222
No Deaths.		
Of these there were in their 1st confinement		34
„ „ 2nd „		34
„ „ 3rd „		35
„ „ 4th „		27
„ „ 5th „		21
„ „ 6th „		18
„ „ 7th „		23
„ „ 8th „		11
„ „ 9th „		7
„ „ 10th „		7
„ „ 11th „		2
„ „ 12th „		1
„ „ 13th „		1
„ „ 15th „		1
		—222
Number of children born		226
Alive	212	
Dead	14	
Of these there were Single Births	216	
Dual Births	5	
Number of full time Children		226
Males	114	
Females	112	
Premature Children	1	
Presentations—		
Vertex	214	
Breech	5	
Foot	3	
Face	1	
		— 225
Operations—		
Low Forceps	1	
Craniotomy	1	
Externs attended cases as follows—		
Mr. J. J. Spong	52	
Mr. J. E. Anderton	48	
Mr. H. A. B. Davies	38	
Mr. T. B. Jacobson	50	
Mr. T. A. J. Shepherd	34	
		— 222

FELIX JONES,
Junior in Charity for July, 1879.

GUY'S HOSPITAL GAZETTE,
OCTOBER, 1879.

CARDIAC REMEDIES.

(*Concluded from page* 75.)

Venesection.—Under certain conditions, the abstraction of blood from the venous systemic circulation enables an overburdened heart to continue its action. As in the case of bladder paralysis from an overdistended bladder, so a dilated and overdistended right side of the heart is accompanied by more or less paralysis of the cardiac muscle; this is due not only to the actual stretching of the muscular fibres, but probably also to deficient nutrition of the nerve ganglia in the substance of the heart itself consequent on the local pressure and impaired quality of the blood supply. Blood-letting, from a vein in the arm or from the external jugular, meets both these conditions in the following way:—(1) The *sudden* removal of some ounces of blood from the venous circulation relieves the tension of the muscle fibres and removes the pressure on the ganglia. (2) A quantity of imperfectly aerated blood, blood poisoned with undue accumulation of CO_2 is taken away; nutrition consequently improves. (3) The evil effects of CO_2, circulating in the bulb on the heart's action are lessened. The first of the effects is the principal one to remember practically in treating sudden failure of the heart. All old standing cases of heart disease are liable to sudden and alarming attacks, due to more or less complete failure of action, especially cases of mitral disease. These serious symptoms point usually to failure of the right side of the heart. There is pain in the cardiac region with a great sense of oppression there, and it often occurs in paroxysms; dyspnœa is marked; epigastric pulsation, which has probably existed for some time previously, becomes very distressing; pulse becomes very small and irregular; patient gets up and sits by the side of the bed gasping for breath; the sight becomes dim and in some cases there is total loss of sight; the face is pale, but there may be occasionally, lividity, dyspnœa increases, and the pulse may become imperceptible. In such emergencies as these, blood-letting to 12 or even 20 ounces, if necessary, often acts like a charm. As the blood flows the sight returns, the dyspnœa lessens, the pulse improves in force and strength, and the patient is able once more to lie down comfortably in bed. The change known as fibroid degeneration of the heart, unaccompanied by any particular valvular lesion, may give rise to sudden and distressing attacks of dyspnœa with a pale, anxious face, and amaurosis more or less marked. This condition is due to actual failure of the diseased muscle fibre usually in the right side, and bleeding may do good by suddenly lessening the amount of work to be done by the enfeebled right side. Nitrite of Amyl dilates the arterioles all over the body, especially in the head and face; the blood pressure is lessened, the patient is bled, so to speak, into his own vessels; for these reasons it is often administered in attacks of cardiac dyspnœa, but it does not produce the same marked mechanical effects in relieving the right side of the heart as bleeding does. In the course of conversation with a general practitioner of great experience, I asked him what experience he had had in bleeding in heart disease, and to what he referred the good that often resulted. He answered at once, that he thought the good was due to the *sudden removal* of blood, and in his practice he always made a good opening in the vein, for when the blood trickled out slowly the same immediate good result was not obtained. Those cases of mitral regurgitation accompanied from the first by great congestion, in which we often find the patient sitting up with purple lips and gasping for breath, are much relieved by instant bleeding, but a full dose of Digitalis acts wonderfully, and the exhibition of this drug in large doses is the proper treatment to begin with, unless there may be very urgent need.

In Acute Bronchitis where great lividity comes on in a short time with slow and laboured respiration, bleeding does good by acting on the right side of the heart which is secondarily affected by the pulmonary congestion. Of this several good examples have occurred in the wards; one, a woman in Mary who was bleed at once by Mr. Barrs; and another, a man in Stephen, bled by order of Dr. Pye-Smith. The man was relieved, but ultimately sank with Renal complications. In these cases the removal of blood poisoned with CO_2 no doubt also contributes to the general good result. Space prevents my going more into this interesting subject, but I have endeavoured to give the leading principles of venesection in heart disease, and it will be seen that the chief good is obtained by relieving the heart mechanically.

Aconite slows the heart when given in moderate doses; as it will act on the excised heart, it stimulate the ganglion I. (see diagram). But it also irritates V.I.C. the centre in the bulb, which depresses the heart still more; besides this, it also inhibits the vasomotor centre. Hence it is a great depressant to the circulation and superior to Tartar Emetic. Blood pressure is also reduced by it, for Aconite dilates the arterioles all over the body. In simple uncomplicated Pyrexia, we have quick action of the heart, contracted arterioles and hot dry skin; theoretically, Aconite ought exactly to meet these conditions. Hence it has been recommended as a specific in Tonsillitis and Pneumonia. Clinical evidence is conflicting as to its efficacy in these diseases; it seems to do good in Tonsillitis in most cases. In Acute Pneumonia in young adults, I have seen it tried in two cases, and it seemed to have some good effect in reducing the temperature and it certainly reduced the pulse. But those who believe in Tonsillitis and Pneumonia being both

specific diseases which have to run a certain course, refer the improvement in the symptoms to a stage in the disease and not to the action of drugs. By Dr. Moxon, the use of Aconite in Pneumonia is compared to "tying a weathercock," the pulse is reduced, but the disease runs through its course all the same.

In a case of Acute Rheumatism, where Pericarditis came on almost immediately on admission, this latter complication produced such distresting symptoms that late one night I determined to directly reduce the heart's action by Aconite. Accordingly, ℥v. of the tincture were given every two hours and the symptoms carefully watched. In a few hours the pulse was considerably reduced in rate and the temperature slightly lowered, while the pain and cardiac distress were decidedly relieved. Next day the Aconite was given at longer intervals, and the intensely irritable heart was much quieter. In this case, Salicin and Salicylate of Soda were not well borne, so that the good was not due to them, as very little was given; and it seemed very probable that the amelioration in cardiac symptoms was directly due to the sedative effect of the Aconite.

Tartar Emetic.—This is the only cardiac sedative of importance remaining, and it deserves mention as the drug which was so extensively used at one time in the method of Rasori. That it is a powerful heart depressant will be seen from the following brief account of its physiological action. It was given chiefly to counteract the effects of acute inflammation, but in the mistaken notion that a patient with inflammation was too strong and required to be depressed.

Physiological action.—(1) In small doses (1-12th of a grain) it produces very slight diminution in the strength of the pulse, with a little sweating.

(2) In larger doses there are present—

a. Nausea and vomiting.
b. Marked reduction of pulse force.
c. Feeling of faintness.
d. Great muscular relaxation.
e. Sweating and salivation.
f. Purging, at first serous in character.

It will be seen that *b* and *c* are evidences of the direct action on the heart of this drug; that *e* and *f* point to its action on the vasomotor centre, and that *a* shows its action on the vomiting centre. Tartar Emetic, therefore, acts both directly on the heart, and indirectly by its effect on the vasomotor centre on the heart also.

GEORGE MACKERN.

VIVISECTION.

(*Concluded from page* 108.)

"In aiding Medicine and Surgery, (1) The transfusion of blood and introduction directly into blood of medicines first proposed by Robert Boyle in 1665. (2) Artificial respiration. (3) The causes of the cardiac sounds have been determined entirely by vivisectional experiments (4) Phenomena of the circulation within the cranium examined experimentally by Kelly, Burrows, Reed, &c. (5) Hunter's operation for aneurism was first demonstrated and tried on living animals. This he did in 1785. He also found by experiments on animals that in many cases the arterial coats were diseased immediately above the aneurism, and that consequently it was necessary in order to avoid secondary hæmorrhage to place the ligature higher up. (6) The office of the periosteum in regeneration of bone. (7) The researches of Redfern into the diseases of cartilage. (8) The researches of Stricker, Cohnheim, Von Reckimghausen, and many others, on inflammation; more especially of serous membranes. (9) Without vivisection experiments we would know almost nothing of the phenomena of inflammation. (10) Experimental enquiries into many zymotic diseases showing occurrence of micrococci.

"In advancing therapeutics, relief of pain, &c. (1) Use of Ether. (2) Use of Chloroform. (3) Chloral discovered experimentally by Liebreich. (4) The actions of all remedies are only definitely ascertained by experiments on animals. (5) Action of Calabar bean by Fraser. (6) Antagonism between active substances and the study of antidotes by many observers."

It must also be remembered that the whole science of therapeutics rests on experiments on animals. In England many hundreds of people die every year of tuberculosis, and until lately the disease was not understood, but now, by the powerful aid of experiments on animals, the causation of the disease is beginning to be comprehended. In medical jurisprudence the importance of experiments on animals is very great. Drs. Taylor and Reed obtained the conviction of the famous Palmer by means of experiments on rabbits, by which they showed that death might take place from poison although no trace of it could be detected in any way. Another case occurred in Suffolk in which Dr. Taylor saved a woman. She was charged with the poisoning of her child who had ringworm. She had applied an ointment of white precipitate and arsenic to the child's head to cure the ringworm. The child died, and some of the poison was found in the child's stomach. Drs. Taylor and Parry then tried experiments on dogs to see whether it were possible that poison introduced into a wound or got into the circulation in any way might be found in the stomach. They found that this was the case, and their evidence was accepted by the jury at the coroner's inquest, and a verdict of accidental death was returned, and the woman saved a criminal trial.

In physiology vivisection is absolutely essential. To set a physiologist to work without first of all giving him permission to vivisect, would be like setting a palæontologist to work but first of all telling him that he must on no account break the stones and rocks with his hammer and chisel; or, again, it would be like setting a chemist to discover the composition of various bodies but telling him that on no account is he to split them up.

It has been said that in England the practice of vivisection is very much abused, and that the medical students practice by themselves. This, however, as the Report of the Commission says, is quite abnormal, and probably ever since vivisection began, not half a dozen animals have been sacrificed in this way. It is also said that experiments are repeated needlessly, but there is no

harm in this if the animal be under an efficient anæsthetic; and there is not the shadow of a proof that very painful experiments are repeated unneccessarily; in fact, Dr. Pavy says he is sure they would not be tolerated at Guy's. An exception should, however, be mentioned: that of the experiments performed by students in the yard of the Veterinary College at Edinburgh, but as before explained this would seem by Mr. Mills' report to be due to defective discipline.

It seems, then, from the above description, the following facts may be gathered:—(1) The number of vivisection experiments is very small. (2) They are most of them quite painless, being performed under anæsthetics and the animal is generally killed before the anæsthesia passes off. (3) Medical students would not permit anything painful, and private investigators have the greatest consideration for the animals under experiment. (4) They are the very foundation of physiology and therapeutics, and the good they have done to mankind is enormous. (5) Experiments by inexperienced students are quite the exception. Nevertheless such is the peculiar constitution of the mind of a large section of the British public that they clamoured for a law to stop vivisection or put it under restrictions. But no law is clamoured for to stop the trapping of 3000 rabbits a year on a single warren in Scotland, although those animals that get caught early in the night are obliged to remain maimed and writhing till the morning, not being anæsthetised in the slightest. The last case is no exaggeration, the warren in particular where the above occurs is in Ross, and during the night the animals may be heard filling the air with piteous cries.

Of all the rabbits vivisected in England in a year not one is put to the misery that these creatures are, but the humane ladies who get up antivivisection societies and send petitions to Parliament, are quite willing to eat the rabbits and pay prices for them which encourage the trade. As Professor Huxley puts it, if a physiologist were to invent a machine which could follow a hare, and eventually catch it after keeping the poor animal in a great fright for some time, and then he were to set the hare running round a gallery with the machine after it, he would be stigmatised as a cruel and barbarous man. But pray wherein lies the difference between the above experiment and ordinary coursing? to take one of the worst instances. The noble British sportsman takes his gun, goes to the fields and moors, and makes it his special purpose, for the time being the object of his life to kill as many birds as possible. But though his aim be to kill and not to wound, yet with all his skill, how many birds get away with shot inside, which at once set up inflammation, and the poor creature lingers on and finally dies, after having experienced pain from internal injury and inflammation of the serous cavities, not to be beaten by the most atrocious vivisection experiment ever devised. It was then in reality the wish of some to pass a law by which, if a man killed an animal for the purpose of adding to his slight stock of knowledge of the mysteries of life, he was to be treated as a criminal, but if he did so from mere wanton cruelty, or for the gratification of his own bloodthirsty tastes, he was to be let off, society would treat him as a follower of the noble sport. However, some of those who desired a bill did not go to such lengths as these, but only wanted to restrain the practice of vivisection; they, however, had better have left the subject alone. The evidence they brought forward was very weak, and was still more weakened by the conduct of Mr. Jesse, the representative of the Society for the Abolition of Vivisection. More than once he interrupted the member of the commission who was questioning him, and on one occasion Professor Huxley was saying he was sorry to take up the time of the commission, when, without waiting to hear the end of the sentence, Mr. Jesse broke in, asking him why he did it. What the object of reading Celsus was is more than one can make out, considering anæsthetics were quite unknown in his time, but nevertheless, the above-named gentleman tried to plague the commission with pages of that author. Mr. Jesse seriously libelled the governors of the hospitals when he asserted that the money of the hospital went towards the teaching of physiology, and when brought to the point by Mr. Erichsen, he was unable to state his authority, and kept talking about "private pockets," and did not seem to understand that the students paid fees. I introduce this to warn Guy's men against arguing with antivivisectionists, for even the secretary of the Society for the Abolition of Antiviviseciion is not capable of reasoning like any ordinary human being.

The present government yielded to the petitions that fell upon them by scores, and framed a bill which was entirely at variance with the report of the commission. The medical profession could not stand this, and therefore waited on the government to beg them to alter the bill. It is not exaggeration to say that one of these deputations was about the most learned that ever waited on a minister; the whole of the members of the profession composing it were called together at a very short notice. They were quite justified in their action, for even the very first clause of the bill as it then stood was an insult to the profession. The promoters of the bill had not the audacity to pay no attention to the opinions expressed by these deputations, and accordingly in its passage through parliament it was very much shorn, and as it now stands does not much affect physiologists.

The Act (39 & 40 Vict., c. 77) consists of twenty-two clauses. The first clause contains the short title, over which there was so much dispute, and the previously obnoxious one is now reduced to "*The Cruelty to Animals Act*, 1876"; this is a great improvement, for it casts no slur on the doctors and physiologists, whereas the former one distinctly did. The Act then goes on in the second clause to prohibit painful experiments upon animals except under certain conditions. These conditions are briefly these:—(1) The experiment must be with a view of advancing knowledge either in saving life or in physiology. (2) The experimenter must be licensed by the Secretary of State, or the experiments must be for instruction in a registered place. (3) Anæsthetics to be used during the whole of the experiment. (4) If it is likely the animal will feel pain when it recovers, it is to be killed before the influence of the anæsthetic is over. (5) The experiment shall not be to illustrate lectures. (6) The experiment shall not be to attain manual skill. Then follow four saving clauses. (1) Experiments may illustrate lectures on certificate that they are necessary for the instruction of the students to whom they are given, with a view of enabling them to acquire physiological knowledge or knowledge in saving life. (2) No Anæsthetics need be used on certificate that they will

vitiate the experiment. (3) Under the same circumstances the animal need not be killed before recovery from the anæsthetic. (4) Experiments need not be to advance knowledge, but may be to test the accuracy of former experiments, on certificate that such experiment is necessary. The next clause prohibits the use of urari as an anæsthetic, and the following one prohibits the use of dogs, cats, horses, asses, or mules unless it be shown that no other animals are available, and the last clause, in the first section, prohibits exhibitions to the general public. The second part of the Act relates to licenses; they are to be granted by the Secretary of State, and he may insert in them that the place where they are to be performed shall be registered. He is to have absolute power over the licensing; he can demand reports and command inspections. Any application to him for a license must be signed by one or more of the presidents of certain learned bodies—such as the Royal Society, Colleges of Physicians and Surgeons, and many others of a similar character. In cases of vivisection for medical jurisprudence in criminal cases judges may grant licenses. The third and last section of the Act relates to legal proceedings. On warrant the police may enter the house of unlicensed persons, and in England they shall be prosecuted under *The Summary Jurisdiction Act.* In Scotland offenders are to be prosecuted under *The Summary Procedure Act,* and in Ireland in a summary manner according to the provisions of the "*Petty Sessions Act.* The penalties are for the first offence not to exceed fifty pounds, and for the second not to exceed one hundred pounds, or three months imprisonment. No licensed person may be prosecuted without the consent of the Secretary of State. No part of the Act applies to invertebrate animals.

Having now briefly sketched the main features of the Act, let us see how far it will tend to stop the practice of vivisection. It is obvious that as for private investigation, the experimenter must get permission from the Secretary of State, and in cases of experiments in lectures it must be shown that they are necessary; the whole thing rests on the Secretary of State, and he reigns absolute. Is the Secretary of State ever likely to refuse to learned scientific men that they should investigate the laws of nature? Considering that he has usually been, and is always likely to be an educated man, who has been a credit to his university, he will be far too wise to refuse a license to any of the scientific men who before the passing of the bill used to vivisect. Of course, if Mr. Jesse or that eminent Roman Catholic Divine, who took such a prominent part in the agitation against vivisection, were ever to become Secretary of State for the Home Department, all experimental physiology would be at an end; but, happily for the English people, such a misfortune is not likely. There is no fear that the presidents of the various societies mentioned in the Act will refuse to sign an application, for most of them owe their present high position to the sciences, the very foundations of which have been established by vivisection. Although, as just mentioned, the Secretary of State is not likely to abuse his power, he nevertheless ought not to have it. Generally he has had no physiological training, and is therefore quite unable to understand the importance of the questions which vivisection is required to settle.

The power of granting licenses ought to have been vested in a body composed of members about half of whom should be physiologists of great repute, and the other half should have been composed of men selected from the general public. Certainly the new duty imposed upon the Secretary of State is not an enviable one, he will have on the one hand to satisfy his scientific friends, and on the other he will have to do his duty, so as to keep the Society for the Abolition of Vivisection from spreading false statements and wasting public time.

There was a good deal of discussion about clause 5, by which experiments on dogs, cats, horses, asses, or mules are prohibited, unless it be shown that the experiment will be necessarily frustrated unless it be performed on one of these animals. The bill would have been improved had this clause been left out, not that the love a man has for his intelligent mastiff is to be disregarded, but because if he had the slightest affection for it, he would take good care that it was never vivisected. There are many curs it would be an advantage to vivisect, creatures that nobody can have any regard for, considering that they yelp and make a melancholy moaning row just as one begins to sleep, and keep it up until you get out of bed in the cold, open the window, and throw your brush at them, and then shivering, and having run your head against the bed post in the dark, you get into bed again, and just begin to get to sleep when the same operation has to be gone through again; the same story might be told of cats. The vivisector provides for such creatures a painless death instead of an extremely painful and weary life. With donkeys there is a curious inequality of justice. A brutal costermonger who beats with a cudgel a poor donkey he has starved till it is only a bag of bones, is subjected, if he ever happens to get prosecuted, to a small fine or to a slight imprisonment, which he enjoys, for he does not then have to work for his living; but let a scientific man of high learning, perplexed by the laws of nature, try to discover some great truth by putting the creature under chloroform, and making a slight cut in the neck, and then killing it before it returns to life, in order that it may feel no pain, let him do this, and he is to brought up before the magistrates with the drunk and disorderly, and then to be subjected to a fine not exceeding fifty pounds.

This, then, is the Act which the agitators have got, and let us hope it will keep them quiet. All they have secured is that they have somewhat hampered the scientific man by making him get a license, and have prevented a few frogs from being curarized, and have specially protected yelping curs and horrid cats by Act of Parliament. If the people were determined to protect animals, surely they would have employed their time better by protecting animals that please man instead of curs and toads. They would have been better occupied if they had spent one-tenth part of their energy in preserving one or two of the beautiful creatures that are left in England. Nine-tenths of the English people only know the kingfisher and owl by name, unless they have seen them either in young girls' hats or mounted on fans, &c. It is quite possible now to live in a country place, and only see either of these beautiful birds once a year, whereas in the same place a hundred years ago they might have been seen a hundred times. These last remarks do not apply to some of the antivivisectionists, for example—Baroness Burdett Coutts—for, as we all

know, she is as energetic in suppressing thetraffic in beautiful birds as in suppressing vivisection, but the blind English people will not answer her call for the first case, but troop after her by thousands in the second instance; they seem as though all the experience in the world would not teach them to follow the wise and thinking men of the nation who are always in the minority. They will not listen to Mr. Rusken who denounces the destruction of the beautiful creatures, they will not follow the example of a gentleman living in the Isle of Wight, who carefully preserves all birds on his estate, even if they are not game, but they are led away by a sensational daily paper, that in speaking of vivisection talks of the horrors of "*lorlinglead,*" and during the trial of murderers devotes pages to an account of the deed, and then minutely describes the looks of the man just before he is hung.

The only cases the bill really stops are the two or three which the Commissioners consider to be abnormal, for the Home Secretary will be quite right in refusing licenses for such experiments. It is so like many of the Bills passed since February 1874. It will effect nothing in this case, because there was nothing to effect, as hardly any unnecessary cruelty was practised. It is wrong to say, however, that nothing has been effected, for it has the effect of perplexing the people whom it concerns, by putting them under the necessity of getting a license. At any moment they may be interrupted and commanded to make a report, and an inspector may come in and turn over all their things, and perhaps this interruption may spoil the work of months. The same government which put off a Merchant Shipping Bill which concerned men and not curs till the fag-end of the session, and then threatened to throw it up for a bill nobody cared two straws about, has spent valuable time in debating whether frogs and sprats should be specially protected by "The Queen's most Excellent Majesty," and "The Lords Spiritual and Temporal and Commons in this present Parliament assembled."

GUY'S HOSPITAL PUPILS' PHYSICAL SOCIETY.

Session 1879-80.

Honorary President:
Samuel Wilks, M.D., F.R.S.

Presidents:

Mr. F. T. Bayes.	Mr. B. N. Rake.
Mr. J. Cock.	Mr. G. H. Russell.
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Mr. A. E. Maylard.	Mr. W. H. White.
Mr. J. T. J. Morrison.	Mr. P. M. Wood.
Mr. E. Penny.	Mr. L. C. Wooldridge, B. Sc.

Meetings at half-past Seven o'clock.

R. Clement Lucas, B.S.
C. J. Symonds, B.S. } *Hon. Secs.*

THE SOCIETY'S PRIZES.

Two prizes of the value of £10 and £5, in books or instruments, will be awarded for the best papers read before the Society during the session.

A prize of the value of £5 will be given for the best essay on the following subject:

"Anæmia."

The essay must be illustrated by cases, which have been in the Hospital during the Candidate's studentship.

A prize of the value of £5 will be given for the best essay on the following subject:

"The Physiology and Histology of Secretion."

A prize of the value of £5 will also be given to the member who has distinguished himself the most in the debates during the session.

The essays are to be delivered at the Library, under cover to the Honorary Secretaries, on or before the 1st March, 1880, in order that they may be examined by a Committee of the Presidents for adjudication.

1879.—Saturday, October 4th, Mr. G. J. Wilson.—"Chloral Hydrate."

Saturday, October 18th, Mr. Irwin Palmer.—"Some Peculiarities of Sex."

Saturday, November 1st, Mr. D. C. Trott.—"The Treatment of Chronic Abscess."

Saturday, November 15th, Mr. J. W. Hodgson.—"Mesmerism and its uses in Medicine."

Saturday, November 29th, Mr. J. W. Nicholson.

Saturday, December 13th, Mr. W. W. Pryn.—"Some points in Heart Disease."

1880.—Saturday, January 10th, Mr. Percy Warner.—"Chronic Rheumatic Arthritis."

Saturday, January 24th, Mr. B. Studer.—"Empyema."

Saturday, February 7th, Mr. G. N. Pitt.—"Temperature."

Saturday, February 21st, Mr. Lockhart Stephens."—"Drinking Water as a cause of Disease."

Saturday, March 7th, Mr. E. A. Starling.—"Chronic Joint Disease."

Saturday, March 21st, Mr. J. A. P. Price.—"The Functions of the Pneumogastric Nerve."

The following letter, addressed to one of the Staff, might suggest to the School Board that in London English is still but little understood:—

Please sir, Mr. ———

i will inform you that in speaking about what you said to try and get me what you said on Wednesday taking in day and i am doing very little work and that i cannot aford it to get them or else send it down or else try and get it do you wont me to get them or his ei yourself llet me know or else send down were i live.

GUY'S HOSPITAL GAZETTE,
OCTOBER, 1879.

IN issuing the October number of the *Gazette* we wish to say a word to our subscribers.

To them we must apologise for the want of punctuality which has marked the appearance of the several numbers; but at the same time, must ask them to remember that the Editor is usually one whose time is largely engaged in other work, besides which there is not often a surplus of material.

We desire, if possible, during the present session, to make the paper as useful and interesting as possible. To further these ends we would suggest that our country supporters make the *Gazette* a means for ventilating obscure cases, or recording important facts, which would never find their way into the larger periodicals. We would be glad of communications of any kind from them, either as letters or in the form of essays. We would like also to develop a "question and answer" column, as by this means much information would accrue to our subscribers, as we would endeavour to reply in detail, giving, as far as possible, practical illustrations from cases occurring in the wards. Here, then, is an opportunity for turning to the best account, for the benefit of our subscribers, the great mass of information collected in this hospital, the very abundance of which renders choice difficult, they themselves being able to draw just what information is required. The general liberality of our Staff in everything that advances scientific medicine is proverbial, and we can promise that from this source no impediment will be offered to the plan proposed so long as the scheme is conducted in the spirit here indicated; nay, we even hope to obtain their help.

To our fellow students, and especially those just entering, we look for a greater share of patronage than was afforded last session. The *Gazette* we feel has never yet taken its true position. Many take it up, carelessly turn over its few pages, and characterize the paper as at best dead. Now, fellow students, who does this, evidently blames the editor, forgetting that the *Gazette* is not the project of one in a few, but of the whole four hundred or more men who call themselves students of Guy's Hospital, that the editor besides is a senior student, and looks to every man for support. We feel that the *Gazette* if once acknowledged by the whole mass of our students to be their organ, and once receiving their support, both pecuniary and by supplying material, would become to the individual student far more interesting, and containing communications from so many variously organised minds, would be far less prosiac than it sometimes is, for we would remind our readers that its pages by no means are closed to the various questions of the day. Those in command of the Athletic Clubs will, we hope, furnish us with reports of our prowess in the field, and those with a philosophical turn we will oblige with a "thinking" corner so long and ably occupied by "Pilocereus Seniles."

WE hear, and have reason to believe, with some degree of truth, that there are to be great changes at Guy's, especially in our nursing, and that such alterations take place on the first of next month; but there is rather a startling rumour to the effect that new Sisters, Training Sisters, and the whole staff of nurses are to be engaged or retained, as the case may be, consequent on their willingness to wear a distinctive dress (that, we are told, of the St. John's Sisterhood) at all times, whether in or out of the Hospital, rather than on their qualifications as good nurses. It seems to us hardly just to enforce such rules, and take so much freedom from the servants of an institution, whose great patron, Guy, "was a man of unbounded charity and universal benevolence. So was he likewise a great patron of liberty and the rights of his fellow subjects." There is no one connected with Guy's who does not recognise the advisability of some improvement, especially in the nursing, but we fail to see how reform will be effected when we start with cultivating a love of distinction and hypocrisy, as assuredly does the dress in question, which characterises a certain sect of a community. While, as an additional objection, we would point out that in the streets of such a neighbourhood

as ours, every woman would be at once the centre of observation and remark, whereas, if she wore an ordinary and unconventional dress, she would pass unnoticed in a crowd, and escape the recognition of even our own students. It is on the "tapis" that a room be engaged near the Hospital by those condemned to this thraldom for the purpose of changing their dress, and thus enabling them to appear among their friends as of their kind; but this artifice could not be too strongly censured as it would engender a love of falsehood and deceit, and it is most essential in the training of our representatives of order, truth, and honesty in the wards, that they of all others, should have no excuse offered or allowed them for acting a lie. They should not be intimidated into a compulsory obedience, and a profession of what nine-tenths of them will not conscientiously believe, but they should be treated trustingly, as we would have them treat others, thus encouraging in them the growth of that intuitive sense of honesty, the germ of which is possessed by every human being, and which in its highest development should form the motive power in everything connected with their work.

Guy's has so long prided herself in being purely unsectarian, and now if she not only falls into the error of making *outward show* stand before *intrinsic merit*, but imitates other and smaller hospitals, instead of, as she should, taking the initiative and setting forth an example, not alone in her great and pre-minently practical school, but in every detail of nursing, surely she will have to relinquish her proud position as one of the first hospitals in the world, and take her stand as an humble and by no means discreet follower of others.

From a student's point of view, Guy's holds the first position as an educational institution, and there is no man at Guy's who does not wish to see the nursing placed on an equality in point of excellence with that school of which he is so justly proud. But this he would wish to see done in as conservative a manner as is consistent with the advancement of the times, by improvements, emanating from herself, not borrowed from others, which should have as their aim the perfecting of those high qualities of the mind, so necessary to a nurse, and by which *alone* she should be distinguished.

It were unnecessary to those who heard at the meeting on Saturday, the stirring words with which Dr. Wilks opened the Session, to say more on the claims of the Physical Society. But to those who were less fortunate, let us recommend the careful perusal of the but imperfect report of his admirable remarks upon another page. We, as Presidents, desire to carry out as far as possible the noble aims pointed out by our most respected, may we say beloved Honorary President, and to make the Physical Society of Guy's Hospital a centre of learning and improvement in no restricted sense. In the fulfilment of this object we now call upon our fellow-students for their cordial co-operation. It is, as Dr. Wilks has said, a duty, let us at the same time make it our pride, to support in every way the success of its meetings.

It has ever been the custom since the establishment of this Gazette, to urge through its columns the claims of the Society upon the junior men, but to day we particularly wish to point out to our more senior fellow students the scope there is for the development of its usefulness. To them, of all others, the Society offers the greatest advantages, they are the men who know something of practice, and here, there is opportunity for discussing it, and by this, much that is useful is sifted from the general chaff of perplexity. Were our fourth and fifth year's men to make the Society's meetings their special occasions for discussing modes of treatment, for instance, we venture to affirm, that very considerable benefit would result to themselves, as well as prosperity to the Society. But, unfortunately, we cannot shut our eyes to the fact, that many of our senior students seldom attend, and with these there appears to be a feeling, that there is a want of life in the Society, or that the subjects are unpractical. Now, on a little reflection, it must be clear that the fault lies with these individuals, and not with the Society, for if each made it his object to

attend and to take part in the discussion, there would be gained to the Society men with a great deal of practical experience, and the papers, suggesting lines of thought, would afford them ample opportunity for advancing their views. We hope that the list of practical subjects published in another column will induce these men to attend the meetings.

The Society moves with the day, and is not prevented from taking a still more practical turn, should it be thought desirable. We refer, for example, to the exhibition of specimens and cases, for the carrying out of which the aid of all fourth and fifth year's men is essential.

There is another point in reference to readers of papers which we would like to mention. The reply to the discussion has of late taken a somewhat prosy form, by reason of the detail with which the reader deals with each speaker. We would suggest that it is unnecessary to reply to each individual, especially when offering no objection to the statements made in the paper; and, if possible, the reader should sum up the arguments used and answer them at once; for not unfrequently the same remark is often repeated, and the reply becomes tedious. We need hardly say, however, that when objections are made the author will show his knowledge of the subject by a concise reply. There is often, too, we have remarked, a great hesitation in following the first speaker, and much valuable time lost, while towards the end of the evening everyone is anxious to speak. This we feel is only a bad habit, and one easily to be overcome.

We would also call the attention of all the members to the essays. The senior men have this year a great advantage, as it will be seen, that *the restriction with regard to qualification has been removed, provided the candidate has not completed his fourth year.* This alteration in the rules has been made with the hope that more of our senior fellow students will write essays, and this year the subject is so attractive—"Anæmia"—that we cannot but expeot a good competition. As to the other subject—"The Physiology and Histology of Secretion"—we have no doubt, that as has hitherto been the case with the junior essays, there will be no want of competitors.

We therefore leave the Society with confidence in the hands of its present members. We, as Presidents, promise to forward its interest in every way, and look to our fellow students for that help, which will bring us to the close of a successful session.

ON NURSING.

The management and treatment of our hospital, occupying at the present moment so large a share of interest, nursing, being one of the most important features in the question, deserves some special recognition exclusively its own, and should be judged of not alone by its mechanical art but by its wealth of opportunities and means of doing good, in the real alleviation of suffering, both mental and physical, and for its grand field for educating moral force, which is so invaluable in the training of self-control.

It would hardly be too much to say that nursing deserves to be ranked, if not as high as medical science, side by side with it, receiving as it does the reflective greatness in the saving and giving of life; but judging of the subject *per se*, it is, as it were, a moral and metaphysical science, a science in which affection, the greatest of all the metaphysics, is brought most fully into play, evolving true unflinching sympathy and giving out its fresh untarnished brightness fully and freely without hope of or looking for reward; for if there is one thing more than another that tends to promote real greatness it is that paying out without the consciousness of giving, and in this respect the sick have a peculiar claim upon us. The nurse is, or should be, the perpetual quart to the patient's pint, as Mr. Wendell Holmes delightfully analogises the sentiment; she should be taught Plutarch's aphorism "should the mind sue the body before a court of judicature for due wages, it would be found that the mind would prove to have been a ruinous tenant to its landlord;" she should remember the grand principle of working on the higher nature, that is, if a patient is cross, irritable, or unreasonable, she must prevent anything happening that would tend to encourage this state of mind, and supplant such a condition with interest in something quite apart from himself—for instance, if he has luxuries which some one else has not, his sharing them—and probably one little unselfish act may be the seed of many spontaneous kindnesses and unconsciously to himself his worse nature is weakened and his better nature strengthened. As by use we develop the muscles of our bodies, so either by use or disuse do we affect our moral natures; self-control engenders self-control; gentleness, forbearance, and courtsey, engender their kind, not only in the one from whom they emanate, for each inherent quality of our own has its reciprocal attribute in every one we meet. It is of supreme importance in the treatment of disease

that the mind should, as far as possible, be kept in a happy and contented state, for too often it is a case of "canst thou not minister to a mind diseased." We see this especially in patients who are placed in a somewhat false position by becoming recipients of public charity when their social position has been such that they have been educated to give rather than to receive. Here the nurse's tact and discrimination are of the utmost importance; she can, in numberless ways, avoid wounding the patient's nervous susceptibilities and by appealing to his better nature actuate self-respect by impelling or educating self-respect, and so induce actions which from their very character are recognised as the fruits of moral training. A man, well to do, is admitted into hospital, and not being sufficiently well educated to appreciate his position endeavours to claim his supposed rights; the nurses instantly resent this and consequently treat him with more than ordinary rigour, and thus the foundation is laid of a ruthless maze of intricate misunderstandings; he is subjected to numberless small annoyances from the nurses, who only recognise in him a patient *trying* to give them as much trouble as possible, and so increase his nervous irritability, while he only looks upon them as paid servants to give him what, in his overthwart imagination, he does not receive. Did but some intuitive affection step in sympathising fully with all the patient's trouble, suggest how he, being better educated than those around him, could influence them, we should find instead of this deplorable condition, a happy patient and a cheerful willingness on the part of the nurses to do their best. It is marvellous how a genuine smile, a smile emanating from the real appreciation of a recognised good, or a word, may avert a gathering storm of temper and discontent, turn the whole current of a rapid stream of absorbing inquietude and by so doing weaken the chances of involuntary moral degradation, for the less often a mind becomes impregnated with evil the less it is capable of moral degeneracy; and not only in this do we educate ourselves but every man with whom we come in contact, and not only him, but every one he meets, and a generation yet to come, like a stone thrown in the water forming circle after circle each widening and extending farther and farther until the whole becomes a rippling surface. Therefore let each weigh carefully the grave responsibilities of their own words and actions, and judge the faults of others with compassion, remembering that

"The quality of mercy is not strained;
It droppeth, as the gentle rain from Heaven
Upon the place beneath; it is twice bless'd,
It blesseth him that gives, and him that takes."

With regard to the mechanical part of nursing, which is totally distinct and separate from medicine and surgery, and needs not even a preliminary student's training, every doctor should be a nurse, but a nurse need not and ought not to be a doctor; nursing is essentially womanly, and tends to refine and educate women if they realise its highest aim, but if they indulge an appetite for the horrible and gloat over operations, whose object and skilful performance they cannot appreciate, with barbarous delight, they descend to a level with the creatures of the field,—women shudder that they should belong to them, and men, that they are women.

But in nursing pure and simple the necessary qualifications are quickness, equable temper, conscientious obedience, and self-forgetfulness, a watchful readiness to detect the slightest change of symptoms and a regardlessness of trouble. A nurse needs not to learn the heart sounds, the pleuritic rub, or any such diagnostic sign, but to be "par excellence" she must keep her patients and everything about them scrupulously clean, she must know how to make beds comfortably, change draw-sheets with as little inconvenience as possible, make all kinds of poultices quickly, lift patients without hurting them, pad splints soft and pliable, administer enemata scientifically without injecting as much air as fluid as is too often the case, and above all ward off bed sores, a complication which ought never to be known in Hospital except in case of Fractured Spine and Pyæmia, she should be *au fait* at cooking and able to tempt the most delicate appetite.

In conclusion, we would urge that a nurse should of all things study to present a neat and pleasant appearance, having no glaring inconsistencies of dress or colour which would offend the taste of a refined patient, nor being of so sombre a hue as to depress the spirits of those who are already at too low an ebb; in everything, both in the arrangement and decoration of our wards and in the dress of the nurses, we should strive to educate our patients to an appreciation of truth and beauty and as far as lies in our power form each nurse's character so that

"Women will love her, that she is a woman
. . . . . men, that she is
The rarest of all women."

The Editor has great pleasure in publishing the following letter, with its accompanying enclosure, received from Captain and Acting-Major Busk, Artists' Rifle Volunteers:

LONDON UNIVERSITY RIFLES.

To the Editor of the *Guy's Hospital Gazette*."

Sir,—As I have been for twenty years a member of the London University Rifles, and have found during that time from personal experience, and that of a large number of friends, that service in the force is not only the performance of a duty to our country, but a source of health, strength, and recreation, I venture to call your attention and that of your numerous readers to this body of volunteers.

I enclose a statement giving particulars respecting the

Company particularly attached to the Medical School at Guy's Hospital, for which I trust you will be able to find space in your columns.

The Company has been recognized in the kindest possible way by the Treasury and Governors of the Hospital, who have not only given us permission to drill in the College Grounds, but have granted us part of the Clinical Building as an Armoury.

The drills at Guy's Hospital are so fixed as to take place almost immediately after the Physiology Lectures on Wednesday afternoons.

The Company possesses also the great advantage of forming part of the Artists' Rifle Corps, one of the finest regiments in London. The organization of this corps is most complete, and comprises Transport and Ambulance Departments.

As the members are all gentlemen, they are, whether officers or privates, on a social equality, and thus a great charm is lent to all the drills, and more especially to the Flying Marches and Camps in the country, which take place two or three times a year.

In addition to the regular military work of the corps, there is a large School of Arms which affords continued opportunities of friendly meetings. The corps has every year a dinner at Willis's Rooms, and during the winter months each company holds a series of social evenings, enlivened with music, songs, and recitations.

Thanking you by anticipation for your courtesy in inserting this letter in your valuable paper.

I remain, Sir,
Your obdt. Servant,
EDWARD HENRY BUSK.

LONDON UNIVERSITY RIFLES.

For nearly 20 years a body of Volunteers has been in existence, consisting of graduates and undergraduates of the University of London and students of the colleges and medical shools affiliated to the University and former pupils of all other Public Schools.

These volunteers form two companies in the Artists' Corps (38th Middlesex, R.V.), which now comprises eight companies of nearly 800 men, under the command of Colonel Sir Frederick Leighton, the President of the Royal Academy.

One of the companies is almost entirely composed of medical students of whom Guy's Hospital at present contributes the largest proportion.

The Head Quarters of this Company are at Guy's Hospital, the Treasurer and Governors having kindly assigned it an armoury in the Clinical Building. The Drills take place at Guy's Hospital, at University College, Gower Street, and (during the winter) in Westminster Hall. If a sufficient number of students of any other college or medical school join the company, the Captain will endeavour to make arrangements for drills there.

Uniforms are supplied by the Corps out of the Government Capitation Grant to all gentlemen who undertake to become efficient members of the corps, and so to continue for three years. For efficiency a member must in his first year attend 30 drills, and in each subsequent year nine drills. He must also each year attend the Annual Official Inspection and fire 20 rounds. Each drill lasts one hour.

There is no entrance fee. The annual subscription is £1 6s., which includes the expenses of the brass and drum and fife bands.

The shooting ground, with a range of 900 yards, is at Ealing.

There is a School of Arms with instructors in Fencing, Single Stick, Broad Sword Exercise, and Boxing in connection with the corps, and a public assault of arms take place annually.

At Easter, Whitsuntide, and other seasons of the year, the corps has Flying Marches in the country for two or three successive days.

Gentlemen intending to join can obtain further information at the Armoury at Guy's Hospital on Mondays, Wednesdays, and Fridays from 12.30 to 1.0 p.m., or at any of the drills at Guy's Hospital or University Hospital announced in the Notice Board, or of any of the undersigned:—

EDWARD HENRY BUSK, M.A., L.L.B., (London), Fellow of University College, London, Captain and Acting Major, 1, Gordon Square, and 1, New Square, Lincoln's Inn, W.C.
FRANCIS A. LUCAS, Lieutenant, 39, Gloucester Square, W.
R. W. BROGDEN, The Grove, Clapham.
T. L. DOWNES, 152, Kennington Road.
HATTIAWAY, St. Bartholomew's.
H. P. KEATING (Guy's).
G. L. L. LAWSON. 8, Bonfield Road, Lewisham, S.E.
G. P. LONGMAN, 24, Clifton Terrace, Norwood.
M. PARRY-JONES (Guy's).
G. S. POLLARD, 152, Kennington Road, S.E. (Guy's).

Correspondence.

The Editor wishes it to be distinctly understood that he is not in any way responsible for opinions expressed by Correspondents.

TO THE EDITOR OF THE "*Guy's Hospital Gazettee.*"

DEAR SIR,—As an old Dresser, and one who therefore knows of what well nigh priceless value to future practitioners are the practical appointments of Guy's, may I offer a few words on a matter threatening it would seem the interests of present and succeeding generations of Guy's men.

To better understand the subject, let us go back and trace the progress of events by which the present relations between the various workers in our wards and their several duties have been arrived at. For many years it has been acknowledged on all sides that the part of the work belonging to the students was most efficiently performed, and this, coupled with the fact that they claimed and occupied a position peculiarly free from the trammels which in other hospitals beset and hinder the action of students in their appointments, explains fully the proud position held in after life by Guy's men as being the best practitioners of the day. But at the same time it had to be confessed that in the sister department, viz., the nursing, Guy's fell far below the standard

attained by some other hospitals. It was complained, with truth, that the nurses of Guy's were too much burdened with such heavy drudgery as scrubbing, &c., to find the time even if they had the opportunity for becoming good nurses. But some two years ago an effort was made to remove this reproach; they were relieved of the scrubbing, and though some stumbling blocks still remained in their path, I well remember a congratulatory article in the *Gazette* of the time in which hope was expressed that the course of years would take away these also. Now, whilst evolution was thus going on, a new element was introduced into the wards. Training Ladies appeared: at first singly, and as it were spasmodically from time to time, but soon the numbers increased and became more steady, until the present "School" arose in Mr. Stocker's old house, and now I hear that amid the changes contemplated this winter, will be the development of this institution, and its foundation on a surer basis, that is I presume that its members will be dignified with more official support, and be entrusted with more definite duties than they at present possess. It is on the subject of this establishment as it bears on the interests of students and nurses of Guy's that I wish to write. Hitherto, so undefined has been the position of the Lady Probationers, and so intermittent their presence in the wards, that the existence of their school has scarcely attracted serious attention, while but for an occasional bandage put on, or dressing done on behalf of some good natured, perhaps lazy, dresser, there would have been no reason to suppose that the aspirations of Training Ladies could in any way affect the rights and privileges of students. But now it is time to ask what, under the new régime, are to be the duties of the residents of the "Home"? As I have received no definite answer to the question, I will proceed to point out that their occupation must be found in one or other of the sister departments of ward-work already referred to. Now, presumably, the greater part of their attention will be turned to the nursing side. Shall we see as a consequence a retrograde evolution in the development of our nurses-proper, and their degeneracy to "scrubbers" once more? or again, is it fair that these ladies should monopolise the slight opportunities that exist for the instructing of our own nurses, when they themselves have either no definite object in view in learning nursing or else one far removed from the interests of Guy's? But if this sphere of action should be considered insufficient, and attempts be made to detach any or even the smallest part of those duties which belong to the student of Guy's by right and privilege, then I trust and believe that such opposition will arise as may cause the scheme to be speedily abandoned;—and here let me present the very kernel of my letter, viz., that it rests with the men now holding the appointments to be vigilantly on their guard, that amid the confusion of the 1st of November none of their valued privileges, as dressers or clerks, slip from their grasp. The tendency of the changes seems to be to assimilate Guy's to the state of various other hospitals worked on the plan proposed for her; let our own men look at the position of students in the wards of those institutions and ask themselves whether they will be reduced to the level occupied by these. Should this take place the name of Guy's would soon lose the charm it now possesses. Let me add that I do not wish to reflect in any way on the Training Institution and only refer to it as it relates to the welfare of students and of nurses (though I should have imagined that ladies would have found it far more agreeable to "train" in a place less populated by male medical students). So intimately is the work of the student connected with that of the nurse, and so often is the reputation of the former affected by the honesty and skilfulness of the latter, that no change in her status at Guy's can fail to excite the warmest interest among past and present Guy's men. I need not, therefore, apologise for bringing before the readers of the Guy's *Gazette*, on behalf of nurses as well as students, this warning, which I trust the unfolding of events may prove to have been unnecessary, but "forewarned is forearmed."

OLD DRESSER.

Dear Sir,—I remember once reading in a review of a certain well known work on Pathology that it was an excellent exposition of "Guy's teaching," while again in an almost equally famous one on the Nervous System was found the complaint that too much had been looked at through "Guy's spectacles." These are expressions, among many such I have seen, which point to that position of proud isolation in her doctrine held by our hospital, which appears to be the natural result of the jealous exclusiveness with which she refuses to outsiders a share in her appointments, and recruits her staff solely from her own alumni,—a condition of things with which her very situation in London seems in keeping, indeed I once heard it said of Guy's, described as "that hospital over the water," that "her hand was against every one, and every one's hand against her." And as her teaching is distinctive, so also is her practice. Of every branch of practice, civil, military, or naval, I have often heard the same story, so that in saying of Guy's that above all her sister hospitals the men she turns out are famed as being the most practical, and therefore the best, my conscience is easy that I am prompted by no narrow-minded spirit of self-glorification. To what causes then does she owe her grand position, and how is it that standing aloof, as she does, from her fellows, her teachings are so free from narrow dogmatism? I will reply by pointing out her possession of two great and fundamental principles:—

1.—The freedom of thought and action she allows, which in the complete absence of all sectarian influence (religious or otherwise) has hitherto engendered a breadth of mind in those belonging to her hardly to be expected in any so cut off from influences outside the hospital walls.

2.—The liberality with which she has given into the hands of her students so important a share in the working of the wards, thus offering, by means of her appointments, splendid opportunities for learning.

Now, Sir, as I hear, into a hospital so constituted it is proposed to introduce a system of ward-management, by means of what is known as a "guild," an organization suited it may be to those hospitals already under its governance, but so contrary in spirit to those vitally essential points which I have just shewn to form the very foundation of the greatness of Guy's, that I feel confident so rank a weed will never take root and flourish within *her* walls,—she may stand in need of reform, but it can never be by such means.

GUYITE.

DEAR SIR,—In the course of my career at Guy's I have met with many things which, in my opinion, required improvement, but being a somewhat apathetic individual and having no enthusiasm for a Quixotic career, I have hitherto preferred lounging in the easy chair of sage reflections upon the mistakes of others to mounting a hobby-horse and tilting at windmills. Now, however, I fancy I have descried in the distance a windmill of shaky foundation, which, if allowed to establish itself, will spread its unshapely arms over our heads and disgust our ears with its unseemly and vapid clackings, and I am induced to hope that, as it is of shaky foundation, I may find it worth my while to couch lance and spur horse against it.

For some days, I may say weeks, past ghastly rumours have assailed my ears during my daily peregrinations in the wards; nurses are leaving, and, what is of far more importance, for they are unhappily only too scarce at Guy's, good nurses are leaving. That, you will probably assert, is of little moment to me who am only a student, but so far from holding such an opinion I consider that a good nurse is almost as necessary to my comfort when I am at work in the wards as she is to that of the patients, and I must say that the troubles and changes, which I fear are hanging over us, have filled me with much alarm. One of the most important changes about to be effected is an alteration in the uniform of the sisters and nurses. I have always looked upon the present dress of the nurses, if not particularly beautiful, at any rate as neat and servicable, but the new uniform seems not even to combine these advantages. Where then is the object in view? If the excellence of a nurse depends upon her readiness, not only to discard all personal adornment, but even to sacrifice any natural and pleasing characteristic she may possess, by all means let her be veiled from head to foot, by all means cover up her hair, hide her face, and bid her speak in whispers. Extend this excellent reform to the Staff and their assistants, robe them in a mournful uniform of black with half masks and skull caps and bid them walk the streets and endure the jeers of Borough roughs, who would inevitably run behind and call them "guys." Is it to such treatment our nurses are to be exposed?

I am in hopes that something may yet be done to avert this calamity, that those who are in authority may yet be induced to think seriously before they consent to a step which can produce no real good.

With many apologies for trespassing so far upon your valuable space, I am, SIR, yours obediently,

"D. Q."

PHYSICAL SOCIETY.

On Saturday, October 4th, Dr. Wilks inaugurated in the presence of a large attendance, and amid much applause, the Session of the Physical Society. Our Honorary President began his remarks by saying that he considered the Physical Society an integral part of the School, and called upon all students to become members. It was a loss to those who did not join, and one which many had in after years acknowledged. The Medical School he considered an epitome of the practitioner's life, a part of which was to become a member of a learned society, and to this end the Physical formed a fitting introduction, by affording opportunities to acquire facility of expression and power in discussion.

But personal motive was too low a standard to take, mere self interest was the bane of all new and professional life. There were higher ends to serve in supporting the Society, for as the living for one's country or patriotism was the noblest of all virtues, so a pure devotion to one's profession was the highest aim a medical man could have.

"It" said Dr. Wilks, "is your duty as members of a most illustrious school to perpetuate the honour and fame of your predecessors. For think, that upon these very benches sat the renowned Sir Astley Cooper, and by his side the no less eminent Bright, and even in our own memory such men as Cock, Hilton, Golding-Bird and Gull; that here the famous Jenner sat and discussed for the first time his wonderful discovery of vaccination, and by his side (in all probability) no less a man than Hunter sat. Gentlemen, does not the memory of such men make your whole being glow with pride and emulation and hallow the very benches upon which you sit! These illustrious men, former supporters of this Society, have left to its present members a noble legacy. Let the same spirit influence you gentlemen, and in your hands this Society may be left with all confidence, and the present session which we open to night, must be prosperous."

Mr. G. J. Wilson was then called up to read his paper on "Chloral Hydrate," an abstract of which will appear next month.

GUY'S HOSPITAL GAZETTE,
NOVEMBER, 1879.

CARCINOMA MAMMÆ.

The four following cases of Carcinoma Mammæ were admitted into Lydia Ward, under Mr. Bryant, during his "take in" week, commencing November 5th. For the following report of them we are indebted to Mr. Irwin Palmer.

No. 1.—E. W., æt. 47, has been a widow for the last twelve years. She has four children, alive and well, all of whom she suckled to the ninth or tenth month. Her general health has been good, and her confinements normal. Sixteen years ago, before weaning her third child, patient had what her medical attendant told her was an abscess in the left breast, but which was dispersed by internal remedies. Two years back, the breast not having been active for ten years, she had an abscess in the same situation. It was poulticed and eventually discharged itself, which it has never entirely ceased to do—a small quantity of sero-purulent fluid continuing to exude ever since.

Five or six mouths ago patient noticed a hard lump at the seat of the old abscess, which she thought to be another. This, however, increased rapidly in size, causing pain of a very acute character. She therefore sought the advice of Mr. Bryant, who considering it to be a Carcinoma, advised its early removal.

Upon admission, patient is seen to be a fine-looking, fresh-colored woman, healthy and regular of habit. Her left breast has a large tumour, involving the whole of its tissue and more perceptible at the upper aspect. This is of stony hardness, and appears attached to Pectoral muscle below. The skin over tumour is slightly discolored, being of a dusky pink, and adherent to the growth. The nipple is much retracted, and its surface is sore, being encrusted with discharge. The breast may be freely handled without causing pain, but that symptom appears upon using any pressure. There are no enlarged axillary glands.

At the operation, Mr. Bryant said that before removing the breast, looking at the previous history of abscesses, he considered an exploratory incision advisable. He made this, and his diagnosis of scirrhus was confirmed. The breast was then removed, with the skin covering it, the whole being dissected off the muscle below. The parts were washed with Iodine lotion, the bleeding stopped by torsion and hot sponges, and the edges of the wound brought together with silk sutures and strapping. A drainage tube was introduced and the patient put to bed.

On the third day after operation Mr. Crew dressed the wound for the first time. There was no smell, and primary union had taken place except at the outer extremity of incision, from which the drainage tube protruded, this was removed, and all has gone well since.

No. 2.—S. J., æt. 44, is another widow. She has had nine children, all of whom have been suckled, without causing her any breast trouble.

Twelve months ago she noticed a small lump in the left breast, which increased slowly in size, causing her no pain until a month back, when that symptom occurred at intervals, sharp and lancinating, and passing down her left arm to her thumb. Patient is a strong healthy woman, and before undergoing operation assisted in the heavier work of the ward.

Upon looking at her breasts, which appear well formed, little difference is visible, but the left nipple is slightly retracted. Attached to the gland of that side, and involving it, a hard tumour is felt. The skin is adherent above, but the whole moves freely over the parts beneath. There is an enlarged gland in the axilla.

Scirrhus was diagnosed, and Mr. Bryant removed the whole tumour, and enucleated the effected gland. The operation was performed as in No. 1, and the result was similar, for on the third day after operating, the whole wound, except the outlet for the drainage tube, was seen to have united.

No. 3.—L. N., æt. 46, is a stout florid woman. She is married, and has three children, whom she has suckled with her left breast, as the right one has always troubled her from its nipple being abnormally contracted. Fifteen years ago, during lactation, the right gland was the seat of an abscess.

Eleven months back she noticed a small lump in this breast, which grew rapidly in size. It remained quite painless until four or five months since, when acute lancinations passed through the mamma and down the arm.

On admission, the breast of this side appears as a large irregular mass, extending into axilla. The skin is adherent to the tumour, which is attached to the parts beneath. Its surface is wrinkled with irregularly radiating lines, and nodules of scirrhus material are easily perceptible to the touch. The nipple is very much contracted, although not ulcerated, and the glands in the neighbourhood are not enlarged.

On operating, Mr. Bryant made very free incisions, removing with the tumour a large area of infiltrated skin, and of necessity laying bare the greater portion of the Pectoralis major muscle, off which the growth was carefully dissected. The edges of wound could not be brought into apposition, therefore a large surface was left to granulate. This was well washed with Iodine lotion and afterwards dressed with Terehene oil.

Unfortunately, the next morning after the operation, patient's catamenia, which have been very irregular of late, unexpectedly appeared, causing her much pain and inconvenience. On the tnird day after operation the wound was seen to be covered with healthy gran-

ulations, which were throwing out a good quantity of laudable pus. On the night previous to this there was a slight rise of temperature, it being 100.6°, but this gradually subsided, and a week after operation the thermometer stood at normal.

No. 4.—E. S., a widow, æt. 70, is an active old woman, formerly a hospital nurse. She has a large carcinoma of seven months growth, involving the whole of right breast and axillary glands. The neighbouring parts are extremely infiltrated, and the surface of mamma, with its nipple, are commencing to ulcerate. The patient has, until very lately, suffered no pain, and now it occurs only at intervals. In fact, she says it troubles her so little that she will not undergo an operation for its removal, but will take any amount of medicine! As there are strong indications of pulmonary and cardiac trouble, and taking into consideration her advanced age, her objections to operative measures were not over-ruled. The affected breast was supported with a strapping of belladonna plaister, and a placebo administered before she left the hospital.

A point of interest in the above cases is the conspicuous absence of the so-called "cancerous cachexia," especially marked in Nos. 1, 2, and 3, all of whom were particularly healthy women.

In Nos. 1 and 3 the cancer occurred at the seat of former abscesses, and this is distinctly indicated in No. 1, the malignant growth appearing in the exact situation of previous inflammation.

The ages also of the first three are somewhat typical, being 44, 46, and 47, the growth occurring just about the climacteric.

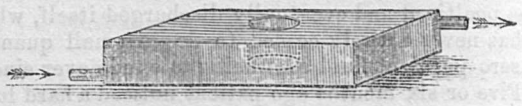
No. 4 may be considered peculiar, from the cancer appearing without any history of injury, at so advanced a period of life, after the breast had been so long in a state of inaction.

There was no cancer in the family history of any of the above cases.

A SIMPLE FORM OF "WARM STAGE."

The clinical examination of blood by the microscope has of late years become a very frequent element in the routine work of "taking cases" for the ward and clinical reports, but it has frequently happened, especially in such diseases as Leukæmia and Pernicious Anæmia, that the results of such examinations have been more or less unsatisfactory, owing to the difficulty of keeping the specimens at a sufficiently high temperature. The forms of apparatus hitherto devised for the purpose are either very elaborate and very costly, or else, when depending for the maintenance of their temperature upon the flame of a spirit lamp, too uncertain to be trustworthy. Under these circumstances it has been suggested to me by some members of the Hospital Staff that I should publish a short description of a very simple form of Warm Stage which I have lately had made for my own use, and by means of which one can maintain specimens of blood at a steady temperature for any length of time with the sole aid of such simple accessories as a kettle of boiling water, two jugs and a thermometer, which one may assume to be always available, at least in the Hospital. This Warm Stage, as seen in the diagram, is simply a brass box, 3 inches long, 1½ wide, and ½ inch deep, perforated through the centre by a round well, of say, ½ inch in diameter and corresponding with that of the stage on which it is to be placed. Two small pipes of ⅛ inch bore communicate with the inside of the box, the one placed close to the lower and the other close to the upper surface at either end. It is of course essential that the two opposite sides and surfaces of the box should be truly parallel to one another.

Two short lengths of india rubber tubing being now fixed on the projecting ends of the two pipes, the stage may be fixed by the ordinary clips to the stage of the microscope. The piece of tubing attached to the lower of the two pipes is then to be placed in a jug of warm water of ascertained temperature, the jug being raised a few inches above the level of the table. A little suction applied to the end of the other tube sets up a syphon action, and by placing a second jug as receiver the apparatus is complete.



By observing the difference between the temperature of the water, before and after it has passed the stage, it becomes easy after a little practice to keep up a steady temperature within the stage itself, and by the occasional addition of hot water from the kettle, to compensate for cooling.

When high power objectives are used, a stop-diaphragm might easily be introduced into the well of the brass box.

The chief objection to the whole contrivance is the necessity for continual attention to it. It will not "work of itself." Such an objection would have weight if the stage were used for prolonged physiological experiments, but as a purely clinical instrument I think such considerations are out-weighed by the comfortable fact that the whole apparatus may be produced in working order for less than ten shillings.

I may add that my own stage was made for me, from a sketch, by Mr. J. B. Medland, Optician, London Bridge.

E. CLIFFORD BEALE, M.B.

THE CONVERSAZIONE.

The fourth of those pleasant reunions that have taken the place of the orthodox "Introductory" was held on October 1st. We are surprised that the innovation has not been accepted and followed by other schools. The opportunities that are afforded those of us who "have passed into the quiet life" of medicine practice, of seeing the acquaintances and friends of student days, are so few, that an annual known meeting place is most desirable, and any harm or loss that can accrue to the students from the abolition of that discourse, in which all hope of teaching was destroyed by the blatant zeal of the taught, is too small to be worth considering. The Conversazione this year seemed to us better attended than ever, and a

sufficient number of ladies were present to give colour and light to a very enjoyable meeting. It is hardly possible to the masculine mind to make a comparative critique on the relative elegance of the dresses, but we have some authority for saying that they greatly excelled those of last year.

Among the exhibits, which were too numerous to be detailed in their entirety, were the following:—A portrait of the late Treasurer, by R. F. Yeames, R.A., which we heard spoken highly of by those who had the pleasure of knowing him; another of Dr. Wilks, to the accuracy of which we were ourselves able to testify. There was a large assortment of surgical instruments, which apparently elicited much admiration from those whose experience of the "Materia Chirurgica" dates from an early age. We observed that the ladies took as wide a circuit as circumstances would permit round that table. A disappointment was experienced in that an incubatory apparatus, exhibited by Mr. Golding Bird, was only remarkable for a notice by the exhibitor announcing that the eggs supplied by the Hospital Egg Merchant were found incapable of being hatched. The series of eggs in different stages of incubation, well known to sojourners in the Anatomical Model Museum, took its place by the side of and illustrated the results of the hatching apparatus. A screen was exhibited, which has been presented to Mr. Howse for his male surgical ward, it was greatly admired, and struck us as being more elegant and less barbaric in the arrangement of its decorations than most of those variegated anomalies that modern taste seems to admire so much. Great labour must have been expended on the production of this screen. Some very fine ornaments, in cast iron, were exhibited by Dr. Braxton Hicks, and we could only regret that Dr. Hicks had not favoured us with more specimens from his collection. It must entail great trouble in sending things down, but Dr. Hicks' exhibits add so greatly to the beauty of the room that we cannot refrain from "asking for more." Continual attention was given to some ingenious mechanical toys, the chief feature of the exhibition being an automatic walking match, in which two dolls were made alternately to pass and repass one another, to the great excitement of the spectators. We observed many of the more deeply scientific among the visitors taking especial interest in the progress of the race. It is a pity that these very ingenious mechanisms cannot be made to supply the place of the more delicate organisms that entertain the spectators at the Agricultural Hall. They would utterly eclipse their human rivals, both in accuracy of performance and in "staying" power. A "practical" exhibition of the manufacture of the now famous "Doulton" pottery divided the claims to chief place with the automata, more continual unbroken circles were formed round these tables than round any in the room. A weighing and measuring machine attracted the suffrages of the tallest and least corpulent of the assembly, and we even saw some of the lady visitors so far give way to feelings of pardonable curiosity as to submit to be read off on a scale. Microscopes abounded, but hardly appeared to receive the same attention as a large Kaleidoscope that was really very beautiful. A steroscopic picture of a great Rhinoceros gathered many admirers.

In the out-patient waiting hall coffee was served as usual, while in the odjoining out-patients' room a "loud speaking telephone" repeated the now well-known performance of shouting the performers words back in his face. The novelty of the instrument is now wearing off, and these exhibitions become somewhat monotonous. No one thinks it remarkably amusing to watch the performance of a locomotive engine. We have hardly done justice to all the beautiful things that were shewn, but making our narrative from memory perhaps this may be excused.

We thought that on the whole there was much less to be seen than on former occasions, but there was plenty to take up the time that could be spared from the two hours. The meeting with friends is the chief amusement of the evening, and there is really not too much time to spare. At 10 the Treasurer distributed the medals and prizes awarded at the end of the session, amidst the enthusiasm of those present. Some speeches followed, which we are sorry to say our position at the bottom of the steps did not permit of our hearing. I understood, though, that the Treasurer excited great applause by announcing that Guy's stood "facile princeps" in the higher examinations—of course this is only what we might expect, but it is pleasant to be told so by a disinterested witness. Dr. Habershon proposed, with his accustomed felicity, a vote of thanks to the Treasurer, which being seconded by Mr. Cooper Foster, was most enthusiastically carried. About half-past 10 the visitors began to leave.

MEDICAL WORK IN CONVICT PRISONS.

Being about to relinquish an appointment in H.M. Convict Prison service, I thought it might be well to write to the *Gazette* to explain the advantages and disadvantages of the service.

The salary of an Assistant-Surgeon varies at different prisons. At Chatham (which I think is as high as any) it is £200 per annum, with a small house (the Assistant-Surgeon's quarters) close to the prison, rent free. Of course, the quarters are unfurnished. The salary rises £5 per annum. After several years in the service, varying according to circumstances, the Assistant-Surgeon may hope for promotion to the rank of Medical Officer, with a salary of between £300 and £500 per annum. The promotions are not made strictly according to seniority. After 10 years service, if he retires invalided, an officer receives a pension. But, of course, he loses this if he retires voluntarily.

An Assistant Surgeon is entitled to 6 weeks leave of absence in the year, which he may take all at once or in parts, whenever he choses, subject of course to the condition that the Medical Officer and Assistant-Surgeon cannot both be away at once. Government provides a substitute.

When he is not at work in the Prison, the Assistant-Surgeon is expected to be at home, so that he may be sent for at once if required, unless he is "off duty." I was off duty every Friday afternoon and evening, and every other Sunday afternoon and evening. But this is an arrangement which rests with the Medical Officer, and therefore varies at the different prisons.

The work leaves plenty of leisure for study. At Chatham the Assistant-Surgeon goes to the Prison at about 9·15 a.m. At about 1·30 p.m. he leaves it. At 4·30 p.m. he makes the afternoon visit to the Infirmary. As of course the main part of the work is done in the morning, this visit does not usually require more than about 20 minutes. If any prisoner is "reported dangerously ill," it is usual for the Assistant-Surgeon to visit him specially between 9 and 10 p.m. Of course,

the Assistant-Surgeon may be sent for at any time on an emergency. But this does not happen very often.

It is a part of the Assistant-Surgeon's duties to attend the wives and families of the subordinate officers. Such as can do so come to the "Medical Office" at the Prison in the *morning*. The others he visits. But, as the subordinate officers nearly all live in "quarters" which are arranged somewhat on the Peabody's Buildings type, close to the prison, this is a duty which does not make great demands on his time. It is in fact rather an agreeable relief from other work. Midwifery is not undertaken. It would interfere with prison duties.

Once or twice a week the Assistant-Surgeon at Chatham has to visit Chattenden prison, which is at a distance of about 3 miles or rather more. In the summer time this is a very pleasant walk. Every other week it is his duty to make a tour of the public works, where the convicts are employed.

It will be seen from this sketch that as far as time is concerned, the duties of an Assistant-Surgeon at a convict prison are not very exacting. But he fully earns every penny that he receives. His post is one of painful responsibility. Prisoners are continually attempting to evade labour on the plea of sickness. Hence great care is necessary lest cases of real illness be overlooked. Then again, upon the Medical Officer and the Assistant-Surgeon rests the responsibility of seeing that the punishment to which prisoners are subjected does not produce an injurious effect. The "bread and water" (which it must be understood means a diet not merely unpalatable, but insufficient) is a constant source of anxiety. Not that one sentence of 3 day's bread and water is a very serious matter. But there are some prisoners who are continually in trouble, and get one term of punishment after another, with only one day between. And it is the duty of the Medical Officer and Assistant-Surgeon to let the thing go on just us long as it can without absolute danger. An inquest is held whenever a prisoner dies. If it appeared that shortly before death the deceased had been under punishment, nothing would be more likely than that some intelligent juryman should ask whether bread and water had anything to do with the fatal termination of the case. A question which might be awkward! For without supposing any actual error in judgment, it must be admitted that one would not prefer a patient who might be seized with serious disease to be prepared to meet the attack by a course of low diet. Yet many would be ready enough to blame a medical man because he cannot prophecy the future or see the invisible. Wiseacres abound. Sometimes the prisoner's friends attend the inquest. I would by no means have the securities against neglect or ill treatment of prisoners diminished. They are very necessary. But they lay open medical men to criticism, often ignorant and unfriendly, in the most difficult and delicate parts of his work, where the fallibility of human nature makes it impossible that the most able and careful should always avoid slips of judgment. I have heard of a case where a prisoner died during corporal punishment. The Medical Officer who had certified him fit for flogging was assailed with a howl of indignation by an enlightened and philantropic public. But probably this was quite unjust censure. There are problems of diagnosis and prognosis which are not difficult but insoluble. The work, then, of an Assistant-Surgeon in a convict prison is beset with anxiety.

I should sum up the pros. and cons. of the service thus:—

Pro. 1.—The opportunity of securing at once a position, which offers a moderate, but certain income, with a prospect of a pension in case of failing health. To a man who is poor and cannot afford to buy or wait for a practice this is certainly a great attraction.

2.—Leisure for study.

Contra 1.—The undeniably disagreeable nature of the work.

2.—The anxiety, above that of ordinary medical work.

3.—There are no prizes in the service. A man cannot expect to obtain anything like professional eminence, or to gain more than a very moderate income.

For myself, I am by no means sorry that I entered the service for a time. The experience, professional and other, was worth getting. But I leave it without regret, although it is right to say that I resigned for reasons quite outside the service itself,

The appointment is to be gained by personal application at the Convict Prisons Department, Whitehall. Candidates must be doubly qualified, and over 23 years of age. Testimonials and a certificate of age should be taken.

It is right to state in conclusion that the recent Royal Commission on Penal Servitude has recommended certain alterations in the manner of appointment and duties of Assistant-Surgeon. But I am convinced that the directors although desiring to carry out all the recommendations of the Commission, will find those relating to the Assistant-Surgeons impracticable. I have, therefore, thought it unnecessary to do more than mention this matter. It would be well, however, for anyone who intends to seek the appointment, to get a copy of the report of the Commissioners. It costs only fourpence, and contains a large amount of information.

FRED. C. COLEY.

THE OUTSIDERS IDEA OF MEDICAL STUDIES.

One unhappy result of a highly complex civilization is that we become increasingly ignorant about the occupation and work of other people. In the days of old this was not the case. When, as happens now in barbarous countries, every man was at the same time something of a statesman, very much of a soldier, and a little of a poet and physician, there was less to be learned about any art, and consequently less misunderstanding about the course of study required for it. Any one could have told you then the whole career of a great doctor from his first apprenticeship as pill maker, to the village Dr. Bolus up to the day when he became a recognised master of the art and mystery of physic. Now the outside would seem to know very little about what we do at the hospitals. Men as a rule are not accurately informed about us, and since our work is a little bit horrible, and is still a little mysterious and uncanny the misconceptions which ladies entertain about us are yet more wonderful and outrageous.

We are described as "walking the hospitals"—a phrase by the way which scarcely does justice to the many sedentary hours spent in the dissecting room, and it is supposed that in this walking process we are continually employed upon experiments. The medical student is credited with an ardent passion for experimenting. It is thought that he spends a great part of his time in vivisecting cats in order to gain operative skill, and that he administers drugs at haphazard to the patients in the wards in order to hit upon a course of treatment which may come into use in his private practice afterwards.

This account of the impressions which prevail about our studies among those outside the hospital may

seem extravagant, but in several instances I have met with people who have been possessed by such delusions as these, and I am sure many of my readers will recollect meeting with similar or even stranger misapprehensions.

An old lady, fond of cats, will often accuse you of a secret longing to vivisect her favourite Tabby when nothing is further from your thoughts, and young ladies will earnestly implore a newly appointed house-surgeon not to try *too many* experiments on the poor patients.

The word "Anatomy" is understood to mean the empirical practising of operations, and the word "Physiology" is even more mysterious, it is commonly supposed to be the promicuous distribution of physic. Even in our hours of relaxation we are supposed to be eager to experiment. Like the medical students of Dickens, we are supposed to look at a big man with a hardly suppressed desire to amputate his legs and arms, and we are supposed to have extinguished the last spark of pity for our fellow creatures in distress, and always to be eager for the happening of accidents wherever we may be.

Much of the astounding credulity and superstition concerning the treatment of disease, which is now common, would be diminished if there were less ignorance as to what a hospital with a medical school really is; but with such vague notions as now prevail it is not very surprising that even educated people trust an advertising quack as implicitly as a qualified practitioner. We cannot wonder at the confidence reposed in a bone setter who takes in hand a serious surgical case "declared to be incurable by all the great London surgeons," and by merely striking his hand over the place works an instantaneous and perfect cure, declaring, meanwhile, that he has effected the cure by the manipulation of some small bone which he alone knows of, and the very existence of which is denied by "the profession." The medical man in fact is still invested by popular ignorance with some of the mystery and magic of the medicine, man and his position is not made easier thereby. But very much of the misunderstanding might be removed by more precise information about the work which students at the hospitals do in preparing themselves for the responsibilities of practice. Surely in this matter a little knowledge is not a dangerous thing. If the outside world could one and all be brought to dismiss the notion that medical students are for ever operating on cats and experimenting on patients, and to substitute for it the notion that at hospitals we study the structure and workings of the human body methodically, and watch the course and nalural history of disease with serious care, there would be much more chance of a true appreciation of the work of medical students and the office of the medical man. Every medical student has it in his power to help in the spread of such more correct views and in the dismissal of the ancient prejudices.

DEATH OF INSPECTOR-GENERAL W. T. DOMVILLE, C.B., M.D.

We greatly regret to announce the death of a very distinguished Guy's man, Dr. W. T. Domville, who died from the effects of Typhoid Fever, at the Royal Hospital at Haslar, on the 21st of October. Dr. Domville, besides holding the appointment of Inspector-General of Hospitals and Fleets, was a Honorary Surgeon to the Queen and Commander of the Bath. He was distinguished alike for administrative ability and professional knowledge, and being possessed of much tact and courtesy was one of the most popular surgeons in the Navy. Dr. Domville was present at the Conversazione last year, and then spoke with pride of the high position held by several other Guy's men in the Royal Navy.

DEATH OF MR. G. W. CALLENDER, F.R.S.

The profession has lost a scientific surgeon and St. Bartholomew's Hospital a distinguished member of its Staff in the death of Mr. Callender, which occurred on board the *Gallia* returning from New York, on October 15th. Mr. Callender obtained the F.R.S. for researches in development, and was chiefly known in Surgery for his advocacy of a modified *Listerism* in the treatment of wounds.

THE APPOINTMENT OF MATRON.

We lesrn, with regret, that Miss Loag, who has held the appointment of Matron to the Hospital for a period of thirty-four years, now finds the work too much for her strength, and has in consequence retired. Miss Loag has long filled a very difficult position with great tact and judgment, and she will carry with her, in her retirement, the good wishes of many who knew her when in office. We hear that the sisters have presented her with a handsome silver salver, and the nurses on their part with a silver inkstand, while a movement in a similar direction is being made by the members of the Staff, though the particular form of the present has not been made known.

We beg to acknowledge the following subscriptions to the *Gazette*.—

Dr. Wilks	1	1	0	Mr. C. W. Crealock	0	5	0
Mr. Dodson	0	5	0	Mr. H. E. Jones	0	5	0
Mr. A. P. Hills	0	5	0	Mr. I. J. Nicholls	0	5	0
Mr. J. E. Fox	0	5	0	Mr. J. P. Winter	0	5	0
Mr. J. Vernon	0	5	0	Mr. H. R. Mead	0	5	0
Mr. W. Hoare	0	5	0	Mr. E. E. Masters	0	5	0
Mr. R. A. Milligan	0	5	0	Mr. C. Woodhouse	0	5	0
Mr. C. N. Graham	0	5	0	Mr. M. O. Rake	0	5	0
Mr. W. R. Etches	0	5	0	Mr. S. H. Mangin	0	5	0
Mr. E. Sharpley	0	5	0	Mr. G. T. Wooley	0	5	0

MARRIAGE.—On the 30th day of October at St. John's, Penge, S.E., by the Rev. MacAnally, A. Kinsey Morgan, M.R.C.S. Eng., to Annie Isabel, youngest daughter of the late Hodges R. Carter, Esq., Q.C., Holmesdale, Penge Lane, London, S.E.

A NEW SCHOLARSHIP.—We understand that Dr. G. J. Beaney has presented £1000 to the Hospital for the purpose of founding a new Scholarship.

GUY'S HOSPITAL GAZETTE,
NOVEMBER, 1879.

SINCE the appearanee of the October number of the *Gazette*, certain "Memoranda for Editors" have been issued. Most of these are *suggestions*, excellent in themselves and calculated to assist greatly in their work the holders of the Editorial office, but are of no public interest. Interpolated among them, however, we find the following order:—"The Treasurer of the Hospital requires that any article or letter criticising the Hospital arrangement or general management of School or Hospital, shall be submitted to one of the Secretaries before being printed." To this we deem it our duty to give full publicity in order that our subscribers may know exactly on what footing it is desired that the *Gazette* as a Students' Journal should stand, the Secretaries on whom this rule whould throw so obnoxious a task, and so much responsibility, being members of our staff.

As aiming still further to define the position of the paper and to deprive it of one of its most important objects, we may call attention to another rule:—"Editors should avoid making the *Gazette* an organ of complaint." We need hardly point out the effect of thus closing the columns of the *Gazette*, in diverting into other and more public channels those natural expressions of feeling for which some outlet would most assuredly be found.

IT is just a year since it was proposed that there should be a Reading Room at Guy's. The idea met with such general approval and support that we were able to start the Society at the beginning of this year with over one hundred members.

The Treasurer, with his usual kindness, allowed us the use of our present room, thereby enabling us to cut our expenses down to a minimum and to devote our income to keeping the room well supplied with current literature.

Now that the Society has passed in safety through that most trying period of all existences, whether human or not, *viz.*, its first year, it may not be amiss to review its condition.

We may certainly characterize it as flourishing, since there are over two hundred names on the books, shewing what almost universal support the Room has met with. Financially, also, the prospect is most encouraging; for although the expenses of a first year are always, heavy including as they do the cost of furnishing, there will be a very fair balance to carry over to the credit of the coming year. We are enabled to do this through the liberality of the staff, who were kind enough to help us by defraying the major part of the expense of furnishing. We would take this opportunity of again thanking the Treasurer and Staff for the readiness which they always shew in furthering anything which is for the benefit of the students.

A fear was at first expressed that the Reading Room would interfere with work; this, we believe, has been shewn to be groundless. We would remark that the Society includes the majority of the hardworking men among its members; while the fact that the room, which will not hold 25 men comfortably, is but rarely crowded shews that it is not used as an habitual lounge.

To Senior men the advantages of the Reading Room are already well known, but we would remind freshmen of the great value which the knowledge gained from general literature is to one in after life; and that it cannot be gained rapidly, but is the growth of years.

LEST misunderstanding should arise from letters published in the last number of the *Gazette* on the subject of the changes likely to take place in the Hospital, we think it only right to state (and we have the Treasurer's authority for doing so) that whatever alterations may be introduced they will not be permitted in any way to affect the advantages and privileges the Students in their appointments have hitherto enjoyed.

PHYSICAL SOCIETY.

CHLORAL HYDRATE.

About ten years ago this drug was introduced as a medicine by Lebreich, who explained its action with such apparent clearness that it came into immediate favour with the scientific therapeutists. The explanation then put forward was that the alkali of the blood decomposed the chloral into a formate and chloroform. This opinion was soon controverted and various experiments were brought forward in proof of various theories. What actually occurs has not yet been satisfactorily demonstrated.

The physiological effects of chloral have been carefully described. It produces a preliminary stage of excitement with flushing of the face and dilatations of the pupils—the retinal arteries are seen by the ophthalmoscope to dilate. This condition is succeeded by a calm sleep, the pupil contracting and the retina becoming anæmic.

It is said that a new theory passes through three phases before it is accepted: first it is absurd; then it is contrary to religion, and lastly, every one knew it before. With regard to a new drug, it seems as if the stages are: first, it is a panacea; then it is a poison, and then any fool should know the proper use of it. In 1871 as much as thirty six millions of doses were sold in England alone. As a result of this extensive use, the journals were soon filled by numerous cases of poisoning by chloral and of chloralism.

Of four cases of chloralism, concerning which I obtained special details, one, who had been taking large doses for over six months, had a temporary purpuric rash and a permanent muscular tremor; another, who had been taking from 35 to 50 grains for eight months, only suffered from slight nervous inability; another, who took from 70 to 80 grains nightly for two years, is now in a lunatic asylum; another, whose chloralism extended over five years, suffered but a trifling nervous disturbance.

Dr. Richardson has lately made a zealous attack on the drug in the pages of the *Contemporary Review*. He and others, who look on this medicine with dislike, point out the uncertainty of its action and the risk there is of inducing a habit of chloral eating. A more careful use of it, observing the rule that it should never be given to procure sleep or alleviate pain unless the cause of the sleeplessness or irritation be transient, would obviate the dangers and give us the benefit of a valuable remedy. There is no doubt that chloral is a very trustworthy drug in some forms of disease, and that those persons who take it habitually would, if if there was no such substance, become in nine cases out of ten opium eaters, drunkards, anti-vivisectionists or teetotalers. When ordering it, however, we should say as the Quakeress said to the man who swore that he would kiss her, "Thee mayest as thee hast sworn it, but thee must not p make aractice of it."

Mr. COCK instanced the experiment of introducing Chloral into the bloodless frog, as proving that the effect of it was not due to reaction in the blood. He thought that the outcry against its use was in a great measure narrow-minded and unphilosophical. No broad general rule could be laid down to guide one in its administration, but each case must be considered and treated on its own merits.

Mr. A. SCOTT, after observing that one of the uses of the Presidents was to look pretty and not to speak unless the debate seemed to flag, said that he had known Chloral to do harm in Delirium Tremens, but it was given to the extent of 120 grains. He quoted personal experience in favour of its use in sea sickness.

Mr. PITT thought that great care should be used in the administration of Chloral. It tended to produce a disease worse even than drunkenness. He explained the effects by its chemical action, which he admitted was obscure. The fact of its use being accompanied by a fall in temperature of a marked character might, he thought, be of use in treating Pyrexia with insomnia.

Mr. BAZES spoke highly of the value of Chloral in midwifery practice. He narrated some cases in which he considered great benefit both to patient and attendant had accrued from its use.

Mr. DENDY thought that the primary dilatation of the blood capillaries might be followed by a contraction due to irritation of the vasomotor centres.

Mr. HODGSON thought the drug available for cases of brief duration only. He mentioned cases of people who had become habituated to Chloral, and had become permanent inmates of a lunatic asylum.

Mr. WARNER suggested the administration of camphor with Chloral.

Mr. CURRIE thought death due to loss of temperature. He instanced experiments on lower animals to prove the point.

Mr. RAKE had used Chloral largely in midwifery with most encouraging results.

Mr. MORRISON gave some interesting details of the use of the drug in mental diseases. He spoke of a case in his own experience where a man who had taken the drug for a fortnight fell down dead after a run of ninety yards, in attempting his escape from the asylum in which he was confined. No cause could be assigned for his death.

Mr. DOWNES thought, in opposition to many, that Chloral was a blessing to that part of humanity who deserved blessings. He dissented from those who abused Chloral because those with weak minds could not restrain their inclinations. Perhaps these things had their uses, securing to the mental part of the economy what struggle did to the bodily part—the survival of the fittest. He concluded by quoting some lines of Crabbe.

MEETING, OCTOBER 28TH, 1879.

MR. F. T. BAYES in the Chair. MR. IRWIN PALMER read a paper on "Some Peculiarities of Sex."

Omitting any special reference to the peculiarities of the external generative apparatus it was the aim of the writer to direct attention to those less palpable sexual differences which might be found of interest, if not indeed possessing a direct clinical bearing in the treatment of disease. For the sake of argument it was thought convenient to consider Man as the perfect type of being, and Woman as a modification of that perfection—the modification being entirely subservient to the maternal functions of bearing and rearing her young.

A few observations were made respecting the proportion of the sexes, and a reason assigned for that excess of male births which occurs throughout the eivilized world. It was accounted for by the increased death rate of male children over female, necessitating a higher rate of production. "With male children the larger size of the body, and more particularly of the cranium, with its higher state of ossification, bring with them a greater risk of death in utero, increased danger in parturition, and probability of injury being received at birth, which may lead to subsequent early decease." Statistics showed that 126 boys to 100 girls die during the first 4 or 5 years. The effect of the relative ages of the parents upon the sex of the offspring was then brought forward as a reason for an excess of male births. The changes occurring at puberty were then commented upon, as also the earlier attainment to maturity, both physical and mental, in women than in the other sex. This was explained by the peculiar adaptation of woman to the important part she plays in the propagation of the species—a part physiologically so much more expensive than that of the male, entailing not only the outlay for nutrition and heat production of the fœtus in utero, but the wear and tear consequent upon the parturient struggle and suckling period afterwards. "To allow for this excessive demand, there takes place what Herbert Spencer calls 'a somewhat earlier arrest of individual evolution' in Woman than in Man, forming a reserve fund of vital force to meet the heavy cost of reproduction in the future." Evolution in the male is continued later, to allow of his attaining those more solid mental and physical proportions necessary to the fulfilment of his peculiar duties of maintenance.

Referring to the relative mental capabilities of the male and female brain, the writer deprecates the over-cramming system of education so prevalent amongst girls of the present day, and showed that the constant application necessary to the study of advanced subjects, occurring, as it must do, at a time when physical development should have every chance, is injurious, if not fatal, to the performance of Woman's parental duties. After mentioning the effect of celibacy upon the sexes, and pointing out its especial physical disadvantages in the female, the difference in the respiration of the sexes was dwelt upon at considerable length, some stress being laid upon the diminished action of the diaphragm in the female. This was considered to be an arrangement of Nature's by which the abdominal contents, and especially the pregnant uterus might be kept more at rest, than the up and down movement of the diaphragm, as in the male would permit.

When dealing with the relative amount of CO_2 exhaled from the male and female lungs, and the effect of menstruation in the case of the latter, due importance was given to the connection between the uterine and respiratory functions in women. More attention might perhaps be directed to the proper regulation of the catamenia in women of a tuberculous diathesis, as any cessation of the menstrual function must, of necessity, throw increased work upon a delicate lung, in its position of an excretory agent. The beneficial effect of the periods in relieving an engorged heart in a case of contracted mitral with subsequent death at the menopause was mentioned. A few more remarks concluded the paper, and Mr. WILSON opened the discussion.

He considered that too much stress had been laid upon the influence of the generative apparatus as a cause of disease. He explained the tendency of the female to assimilate after the menopause to the male type, to absenc of the influence of the genital organs.

Mr. STRACHAN remarked upon the proportion of the sexes in the lower animals, and instanced the Cuckoo.

Mr. RYLE said that the idea that one member of the race was perfect, and the other a declension, was fanciful, for to decide the point there was one method, viz., the power of self-preservation, and as the female possessed this in equal proportion to the male, there was no ground for considering the former imperfect. After mentioning the old view as to the seat of soul being in the pineal gland, he drew attention to the differences of sex in the lower creation, where, as in birds, the male was larger, more ferocious, more gaudy and brilliant than the female, and by these qualities the latter was attracted. In the lower races of man also the female was the duller, the male being painted, tatooed and covered with the brightest blanket. But as we ascend in the scale the difference disappears, and gradually changing to the highest ranks, the condition becomes reversed—the female here wearing bright colours, while the male dresses in more sombre shades. In connection with this he mentioned the recent observations in colour blindness, according to which it was stated that 5 per cent. of males suffered from this defect, and only 5 per 1000 females, and in explanation offered two suggestions, first, that the perception for colours was hereditary in the female; and second, that the habits of the male, such as the use of tobacco and alcohol, injured the perception.

Mr. PINCOTT called attention to the greater liability to death from disease in the female.

Mr. PRICE suggested that the distinction of the sexes sprang from one common being.

Mr. SHAW criticised the character of some of the speeches, and instanced certain practices of female adornment among Hindoos and Chinese.

Mr. COCK observed that in some cases, in Hawks, Eagles' &c., the female was larger, and in certain insects also. He considered the female mind incapable of the same mental effort as a man's, but thought that once moulded it did not easily relax.

Mr. FOWLER said that sexual selection depended upon a battle of the males for the females, the female being attracted to the victor. He instanced examples and remarked that man transmitted his peculiarities to his offspring.

Further remarks were made by Messrs. ROBERTS, WHITWORTH and DENDY, and after a vote of thanks to Mr. IRWIN PALMER the meeting adjourned.

THE BRITISH MEDICAL ASSOCIATION AND THE EDUCATION OF A MEDICAL STUDENT.

In June last a Committee was appointed by the British Medical Association to report on any things occurring in the education of a medical student. The following were the Committee selected:—Dr. Andrew Clark, Mr. John Wood, Mr. Macnamara, Dr. Burney Yeo, Dr. Bristowe, Mr. Savory, Dr. Pye-Smith, Mr. Rivington, Dr. F. Roberts, Mr. Bryant, Dr. Watkins, Mr. Gant, Dr. Salter, Mr. Sibley, Dr. R. Liveing, Dr. Ford Anderson, Dr. Drage, Mr. Cowell, Dr. Robert Barnes, Mr. Wharton Jones, Dr. Edis, Dr. Rogers, Dr. Brodie Sewell, Dr. A. P. Stewart, Dr. Farquharson, Dr. Allchin, and Dr. Grigg, Hon. Sec.

The Committee addressed the following questions to the members of the Metropolitan Branch of the British Medical Association and received replies as stated:—

REPORT OF THE COMMITTEE.

Question 1. Is it desirable that intending medical students should pass an examination in the elements of botany, physics, and inorganic chemistry, *prior to admission* to the regular medical curriculum, and that these subjects should form part of their "Preliminary General Education and Examination"?

Your Committee has received 207 replies from the past and present metropolitan and provincial teachers of medicine and surgery, and 265 answers from general practitioners to this question; 90 per cent. of the former and 96 per cent. of the latter are in favour of making intending medical students pass an examination in the subjects mentioned in this question before allowing them to enter at a medical school.

Question 2. Is it desirable that a certain period, previous to admission to a medical school, should be spent with a general practitioner in the form of an "articled pupilage."

a. If so, when, and how long?

b. And which of the subjects mentioned in Question No. 1, should form a part of this preliminary training? or are there any others?

The answers received by your Committee to this question indicate the existence of a marked diversity of opinion between the teachers in our medical schools and the general practitioners belonging to this branch of the British Medical Association. Seventy-four per cent. of the general practitioners who have sent us answers to this question, express their conviction, as Dr. J. Rogers remarks, that "there is a want in the education of medical students as regards teaching in the art of prescribing."

In order to mitigate these evils, a majority of general practitioners advise that intending medical students should spend at least twelve months of their time as "articled pupils," before they are allowed to enter a medical school.

On the other hand, no less than seventy per cent. of the past and present teachers in our provincial and metropolitan medical schools, are of opinion that a return to the system of apprenticeship, even in the modified form of an articled pupilage, would be a serious error, which some of them find it impossible to sanction. Many of the teachers assure us that young men who have served an apprenticeship, and, not a few, sons of medical men, who have learnt pharmacy in the surgery, and had all the advantages claimed for this system of teaching by general practitioners, have, nevertheless, turned out indifferent students. After leaving school, they are said to have acquired habits which render it hard for them to resume a course of systematic reading; they are described as too often coming up to the medical schools with a very superficial knowledge of medicine and surgery; and as apt to be self-satisfied and supercilious, so that the little they have learnt is really a hindrance to them, preventing their exercising that spirit of enquiry and desire to obtain knowledge, without which it is almost impossible for any student to succeed.

Question 3. Is it desirable that the age of 18 years should be attained before a student enters the regular medical curriculum, and that the age of 22 years be completed before he is permitted to receive a qualification to practice?

With reference to this question we have to report, that 89 per cent. of the teachers, and 97 per cent. of the general practitioners of this Branch of the British Medical Association, are of opinion that pupils should not be permitted to enter at a School to study Anatomy and Physiology, until they are 18 years of age, and that they should not be allowed to present themselves for their final examination before they are 22 years old.

Question 4. Do you approve of the introduction of an examination in Elementary Anatomy and Physiology at the end of the first year of medical studies?

Seventy-nine per cent. of the general practitioners, but only 58 per cent. of our medical teachers, are in favour of introducing an examination in Elementary Anatomy and Physiology at the end of the first year of a student's curriculum. The Medical Teachers' Association, some ten years ago, came to the conclusion, that it was desirable there should be a professional examination for medical students at the end of the first year, and they recommended the Educational Committee of the General Medical Council to enforce this principle: the council declined the medical teachers' suggestion on the grounds, that there was "a disadvantage in having so many examinations, as regards both students and examiners."

Question 5. Is it desirable, that, after passing the "primary" professional examination, every student should be compelled to devote two full years to clinical medicine, surgery, and obstetrics, at a hospital, prior to being allowed to present himself for his final or qualifying examination?

Ninety-two per cent. of the teachers of medicine and surgery, and ninety-seven per cent. of the general practitioners have answered this question in the affirmative. With such a strong array of evidence in favour of this proposition, your Committee do not consider it necessary to discuss its merits; but they would simply state, that they believe it to be essentially necessary that students should devote at least two full years to the clinical study of medicine, surgery, and obstetrics, after passing the "primary professional" examination.

Question 6. Is it desirable that the clinical teachers of medicine, surgery, and obstetrics, should be required to testify as to their personal knowledge of the diligence and acquirements of each student (in place of the formal certificate of attendance now supplied), and that such certificate should be placed before the examiners for their information and guidance?

Forty-seven per cent. of the teachers of medicine and surgery, and seventy-eight per cent. of the general practitioners vote in favour of the principle advanced in this question.

The Committee concluded their report as follows:—

The majority of your Committee beg to recommend that:—

1. Intending medical students should pass an examination in the elements of botany, physics, biology and inorganic chemistry, prior to admission to the regular medical curriculum, and that these subjects should form part of their "preliminary general education and examination."

2. Every student of medicine, before going up for his final examination, should produce a certificate of having studied for a period of not less than six months with a general practitioner who dispenses his own medicines.

3. The age of 22 years should be attained before a student is permitted to receive a license to practice medicine and surgery.

4. An examination in elementary anatomy and physiology, at which every student must appear, should be instituted at the end of the first year of medical studies.

5. After passing the "primary" professional examination, every student should be compelled to devote at least two full years to the study of clinical medicine, surgery, and obstetrics, at a general hospital, prior to being allowed to present himself for his final or qualifying examination.

6. Teachers of medicine, surgery, and obstetrics should keep an accurate record of the visits of students to the wards and the out-patient department, during the time that clinical instruction is being given; a summary of these records should be sent with the candidate when going up for his final examination.

7. Students, before going up for their final examination, should produce certificates of attendance at clinical instruction on the diseases of women and children, mental diseases, and also in ophthalmic medicine and surgery. Students should be acquainted with the elements of practical hygiene.

Signed by
C. MACNAMARA.

FIRST YEAR'S STUDENTS.

The following is a list of the names of the Students who have recently entered:—

Agar, Samuel Hollingsworth.
Aikin, William Arthur.
Bradbury, John Augustus.
Bateman, Marcus Younge.
Bean, Charles Edward.
Brenton, William Hore.
Bindley, Robert Alfred.
Blight, William Lyne.
Brooke, Henry Grundy.
Bovill, Francis Malcolm.
Cahill, William Arthur.
Clark, Arthur William.
Crealock, Copplestone William.
Childe, Letterstedt Frederick.
Cook, Robert James.
Croft, Harry Thomas.
Cornwell, Charles Frederick.
Counsell, Herbert Edward.
Cusack, Reginald.
Dakin, William Radford.
Deare, Arthur Cecil.
De'ath, George Hanby.
Denman, Robert.
Dring, Herbert Johnson.
Dodd, Arthur Herbert.
Dodd, Walter Harry.
Downes, Joseph Oliver.
Du Boulay, Hubert Housemayne.
Eason, Alexander Moulsdale.

Emmott, William Henry Mahoney.
Emery, John.
France, James Mead.
Farr, Frederick William.
Foster, Francis Wheldale.
Fowler, Alfred Henderson.
Fowler, Walter.
Fox, John Alfred.
Fuller, George Harry Hingston.
Graham, Charlie Nicol.
Griffiths, John Birtwhistle.
Hailey, Melville Macpherson.
Halstead, George Ezra.
Harris, John William.
Harvey, James.
Harvey, Robert John.
Heatherley, Francis.
Hillstead, Herbert John.
Hore, Harry St. George Standish.
Howard, Herbert.
Hugill, George Frederick.
Humphreys, Francis Rowland.
Jago, Charles Sprague.
Johnson, George Arthur.
Jones, Hugh Edward.
Joyce, Thomas Telfer.
Lamb, Hugh.
Larking, Arthur Ernest.
Latham, George.
Linnell, Alfred.
Long, Harry Eustace Moore.
Lowe, Wainwright Edward.
Macintosh, Andrew William.
Manley, John Herbert Hawkins.
Masters, Edgar Ernest.
Mawby, Frank Wilders.
Miller, Thomas Hugh.
Minns, Allan Glaisyer,
Mourilyan, Edward Pain.
Mugford, Sidney Arthur.
Murray, Robert William.
Muspratt, Charles Drummond.
Nason, Edward Noël.
Nicholls, Samuel Joseph.
O'Fflahertie, George Fortescue.
Oldham, Montague Williams.
Padbury, George John.
Parsons, John Inglis.
Player, Charles Ernest.
Prendergast, J. J.
Peskett, Arthur William Chalmers.
Pickstock, Thomas Hodson.
Price, Arthur Edwin.
Phillips, Francis Barclay Wilmer.
Phillips, George Gordon Owen.
Pughe, T. W. Owen.
Purnell, Purnell.
Rainbird, Alfred Palmer.
Reynolds, Reginald Stephen.
Robinson, Robert Leslie Denham.
Rockley, Henry.
Rodman, George Hook.
Salt, Ernest George:
Samut, Richard Philip.
Sharpley, Edward.
Sheen, William Mortimer.
Shelswell, William Arthur.
Stewart, George Eland.
Shillingford, Henry Bartlett.
Silverlock, Richard Greenhill.
Simmons, Edward Walpole.
Taylor, Alfred Ernest.
Tresidder, Harry Innis.
Thistle, William George.
Vernon, John James Dean.
Walker, Charles Pope.
Walter, Henry.
Watson, William.
Watson, William Ivens.
West, Christopher Harfield.
Westbrook, Richard Talbot.
Wornum, George Porter.

STATISTICAL REPORT OF GUY'S LYING-IN CHARITY FOR AUGUST, 1879.

Number of Women attended			232
No Deaths.			
Of these there were in their 1st confinement		23	
,, ,, 2nd ,,		34	
,, ,, 3rd ,,		37	
,, ,, 4th ,,		29	
,, ,, 5th ,,		29	
,, ,, 6th ,,		22	
,, ,, 7th ,,		11	
,, ,, 8th ,,		16	
,, ,, 9th ,,		14	
,, ,, 10th ,,		5	
,, ,, 11th ,,		5	
,, ,, 12th ,,		4	
,, ,, 13th ,,		2	
,, ,, 14th ,,		1	
			232
Number of children born			234
Alive		225	
Dead		9	
Of these there were Single Births		230	
Dual Births		2	
Number of full time Children			230
Males		126	
Females		104	
Premature Children		4	
Presentations—			
Vertex		222	
Breech		7	
Foot		5	
Face		1	
			235

Operations—

Turning	1
High Forceps	1
Low Forceps	2

Externs attended cases as follows—

Mr. A. J. Hind	100
Mr. J. H. Booth	57
Mr. R. C. O. Garrard	44
Mr. H. M. Baylis	21
Mr. E. Wakeham	34
	— 232

F. T. REDLEY,
Junior in Charity for August, 1879.

STATISTICAL REPORT OF GUY'S LYING-IN CHARITY FOR SEPTEMBER, 1879.

Number of women attended				242
No deaths.				
Of these there were in their	1st	confinement		36
,, ,,	2nd	,,		33
,, ,,	3rd	,,		37
,, ,,	4th	,,		30
,, ,,	5th	,,		23
,, ,,	6th	,,		27
,, ,,	7th	,,		19
,, ,,	8th	,,		15
,, ,,	9th	,,		9
,, ,,	10th	,,		4
,, ,,	11th	,,		4
,, ,,	12th	,,		3
,, ,,	17th	,,		1
,, ,,	18th	,,		1
				—242
Number of children born				244
Alive				231
Dead				13
Of these there were Single Births...				240
Dual Births				2
Number of full time children				244
Males alive				137
Females alive				107
Presentations—				
Vertex				234
Breech				4
Footling				3
Hand and Shoulder				3
				—244

Externs attended—

Mr. G. J. Wilson	57
Mr. L. Stokes	43
Mr. G. F. Forkes	29
Mr. James Anderson	45
Mr. F. W. Pilkington	52
Mr. Rayer	22

RICHARD WATTS WHITE, M.R.C.S., L.R.C.P., (Lond.)
Resident Obstetric, September, 1879.

DEATH.

SMITH.—November 16th, in South Australia, age 31. Arthur William Smith, M.D., Lond., of Auburn, Adelaide, youngest son of Solomon Smith, Surgeon, Halifax.

APPOINTMENT.

Guy's men will be glad to hear that Dr. Samuel Wilks, F.R.S. has been appointed Physician to their Royal Highnesses the Duke and Duchess of Connaught in place of the late Dr. Murchison.

EDITOR'S NOTE.—In the Essay on Vivisection in our last number we regret to say the name of Dr. Pavy was by mistake printed Perry.

The Entrance Scholarship in Science has been awarded to Mr. W. Fowler.

The Entrance Scholarship in Arts has been awarded to Mr. G. E. Halstead.

THIS DAY, FOOLSCAP 8vo. PRICE 6s.

POEMS,

BY

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